SPECIFICATIONS
PROPOSAL AND CONTRACT DOCUMENTS

SIDEWALK IMPROVEMENTS
PROJECT NO. STPTE-TE13(908)
PROJECT NO. TAPAA-TA13(923)
PROJECT NO. TAPAA-TA15(935)

PREPARED FOR:

CITY OF GULF SHORES, ALABAMA

AUGUST, 2015

DMD engineers

Civil and Environmental Engineering
Andalusia, Alabama

SPECIFICATIONS
PROPOSAL AND CONTRACT DOCUMENTS

SIDEWALKS IMPROVEMENTS

PROJECT NO. STPTE-TE13(908)
PROJECT NO. TAPAA-TA13(923)
PROJECT NO. TAPAA-TA15(935)

GULF SHORES, ALABAMA
BALDWIN COUNTY, ALABAMA

Prepared by:

DMD Engineers, Inc.
P.O. Box 610
201 East Troy Street
Andalusia, Alabama 36420
(334) 222-1849

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ALDOT 2013 STANDARD BID PACKAGE
for FEDERALLY-FUNDED
Transportation Enhancement Projects (TE)
Transportation Alternatives Program (TAP)

The attached documents (available in electronic format) are the ALDOT "2013 STANDARD BID PACKAGE" for Federally-funded Transportation Enhancement Projects and Transportation Alternatives Program. There are at least 13 attachments in a combination of MS Word, MS Excel, and Adobe pdf formats.

The general instructions are: the documents should be assembled in the order in which they are listed below. For the nine (9) documents marked with an asterisk ("*"), follow the directions listed inside the brackets ("[ ]") within each document, and fill in the blanks, etc. Then, **delete the brackets and any included instructions**. "Reformatting" (changing fonts, margins, line spacing's, page numbers/breaks, etc.) of these documents should be avoided, except where absolutely necessary in order to fit in project-specific information. The CONTRACT SCHEDULE may require some spreadsheet manipulation in order to accommodate the number of pay items and alternates (if any) that you have in your project.

File)	Form
i)	ALDOT 2013 Standard Bid Package *(Cover Letter – this page)*
1)	INSTRUCTIONS TO BIDDERS-TE-TAP
2)	*ADVERTISEMENT ("*Notice to Contractors*")
3)	*PROPOSAL
4A)	*CONTRACT SCHEDULE (Base Bid Only)
Or	(same file, select appropriate worksheet)
4B)	*CONTRACT SCHEDULE (Base Bid plus Add Alternates)
5)	SIGNATURE
6)	*FEDERAL-AID FUNDED PROJECTS* (*Contractor must execute prior to award*)
7)	*BID BOND
8)	*SP TAP.doc (*List of special provisions required*)
9)	DBE Forms
	Form HR-DBE (*Bidder's List of Quotes, Revised 01-2007*)
	Form DBE-10 (*ALDOT Form DBE-10 Revised January, 2007*)
	Form DBE-11 (*ALDOT Form DBE-11 Revised January, 2007*)
10)	*CONTRACT
11)	AFF ACTION FOR EEO STMT (*Contractor executes & returns with executed contract*)
12)	*PERFORMANCE BOND (*For Performance Of The Work*)
13)	*MATERIALS BOND (*For Payment Of Labor, Materials, Feed-Stuffs Or Supplies*)

INSTRUCTIONS TO BIDDERS
(Transportation Enhancement Projects)
(Transportation Alternatives Program)

The instructions listed on this page are offered as a courtesy to bidders in order to help avoid situations in which proposals may have to be rejected or eliminated from consideration due to common pitfalls and oversights. This page shall not be considered an official part of the proposal or contract documents, and shall have no binding effect upon them. While completion of the following checklist by the contractor is entirely voluntary, the items listed herein are generally required in order for a bid to be considered.

CHECKLIST

[ ] Submit Proposal on ORIGINAL documents (not copy) provided by owner. (Your set is numbered serially and is not transferrable to another bidder.)
[ ] Everything in INK or TYPED.
[ ] Fill in Date & Time of bid opening and Name(s) & Address of Bidder(s) on Page 1.
[ ] Complete information on Page 1A for any Addenda received.
[ ] Enter Prices & Amounts on Contract Schedule.
[ ] Separate dollars & cents with a single decimal (per Spec. Prov. 12-LPA1).
[ ] Follow instructions (if applicable) in Subarticle 102.06(b) of Spec. Prov. 12-LPA1, for any included “Alternates”, “Cumulative Alternates”, or alternate specified types of materials.
[ ] Sign the Proposal, Page 3, after the Contract Schedule.
[ ] Complete and Sign FEDERAL-AID FUNDED PROJECTS (6 pages).
[ ] Complete Form HR-DBE, BIDDER’S LIST OF QUOTERS. (optional)
[ ] Bid Bond to be signed by same person signing Proposal.
[ ] Bid Bond executed by Surety’s Agent (or cashier’s check from an Alabama bank attached).
[ ] Attach valid Power of Attorney to Bid Bond (unless check attached instead).
[ ] Mark envelope “Proposals for Highway Work” or “Bid Proposal”.
[ ] List Project No., etc. on envelope (see 102.10 in Spec. Prov. 12-LPA1).
[ ] Deliver Proposal with Bid Bond or check in SEALED envelope.
[ ] Submit Proposal prior to date & time set for opening bids.

NOTICE TO CONTRACTORS
FEDERAL AID PROJECT NO. STPTE-TE13(908)
FEDERAL AID PROJECT NO. TAPAA-TA13(923)
FEDERAL AID PROJECT NO. TAPAA-TA15(935)
CITY OF GULF SHORES
BALDWIN COUNTY, ALABAMA

SEALED BIDS WILL BE RECEIVED BY THE CITY OF GULF SHORES AT 1905 WEST 1ST STREET; GULF SHORES, ALABAMA, UNTIL 10:30 A.M.; NOVEMBER 10, 2015, AND AT THAT TIME PUBLICLY OPENED FOR CONSTRUCTING THE FOLLOWING:

SIDEWALKS IMPROVEMENTS

A MANDATORY PRE-BID CONFERENCE WILL BE HELD IN THE COUNCIL CHAMBERS OF THE CITY OF GULF SHORES AT 10:30 A.M.; TUESDAY; NOVEMBER 3, 2015.

THE BRACKET ESTIMATE ON THIS PROJECT IS FROM $800,000-$1,000,000. THIS BRACKET RANGE IS SHOWN ONLY TO PROVIDE GENERAL FINANCIAL INFORMATION TO CONTRACTORS AND BONDING COMPANIES CONCERNING THE PROJECT'S COMPLEXITY AND SIZE. THIS BRACKET SHOULD NOT BE USED IN PREPARING A BID, NOR WILL THIS BRACKET HAVE ANY BEARING ON THE DECISION TO AWARD THE CONTRACT. THE PRINCIPAL ITEMS OF WORK ARE APPROXIMATELY AS FOLLOWS:

4300	SY of Removing Concrete; 206C-028
7200	SY of Concrete Sidewalk, 4" Thick; 618A-000
775	SY of Concrete Driveway, 6" Thick; 618B-002&003
1240	SY of Handicap Ramp Concrete; 620A-100

THE ENTIRE PROJECT SHALL BE COMPLETED IN ONE HUNDRED EIGHTY (180) WORKING DAYS.

TO BE ELIGIBLE FOR CONSIDERATION, BIDS MUST BE SUBMITTED ON COMPLETE ORIGINAL PROPOSALS MADE AVAILABLE BY THE OWNER. BID DOCUMENTS (INCLUDING PLANS AND PROPOSALS) ARE AVAILABLE AT DMD ENGINEERS, INC.; PO BOX 610; 201 EAST TROY STREET; ANDALUSIA ALABAMA 36420, UPON PAYMENT OF A REFUNDABLE (IF PLANS ARE RETURNED IN REUSABLE CONDITION WITHIN 10 DAYS OF BID OPENING) DEPOSIT OF $80.00. CHECKS SHALL BE MADE PAYABLE TO DMD ENGINEERS, INC. BID DOCUMENTS WILL BE MAILED ONLY UPON RECEIPT OF DEPOSIT. NO BID DOCUMENTS WILL BE DISTRIBUTED LATER THAN 24 HOURS PRIOR TO THE SCHEDULED OPENING OF BIDS.

A CASHIER'S CHECK (DRAWN ON AN ALABAMA BANK) OR BID BOND FOR 5% OF THE AMOUNT BID (MAXIMUM OF $10,000.00) AND MADE PAYABLE TO THE CITY OF GULF SHORES MUST ACCOMPANY EACH BID AS EVIDENCE OF GOOD FAITH.

IT IS NOT REQUIRED THAT A CONTRACTOR BE LICENSED IN ORDER TO SUBMIT A BID; HOWEVER, PRIOR TO AWARD OF A CONTRACT, PROPER PROOF OF ALL APPLICABLE LICENSURES MUST BE PROVIDED BY THE CONTRACTOR. PROOF OF INSURANCE COVERAGES OF THE TYPES AND AMOUNTS AS SET FORTH IN THE PROJECT SPECIFICATIONS WILL BE REQUIRED OF THE CONTRACTOR, AND ANY AND ALL SUBCONTRACTORS, PRIOR TO BEGINNING WORK. THE CONTRACTOR WILL BE REQUIRED TO PERFORM WORK AMOUNTING TO AT LEAST 30% OF THE TOTAL CONTRACT COST WITH HIS OWN ORGANIZATION.

CONTRACTOR PREQUALIFICATION IS NOT REQUIRED TO BID ON THIS PROJECT. HOWEVER, THE AWARD OF THE CONTRACT WILL NOT BE MADE TO ANY BIDDER WHO, AT THE TIME OF THE AWARD, IS CONSIDERED BY THE ALABAMA DEPARTMENT OF TRANSPORTATION (ALDOT) TO BE DISQUALIFIED FROM BIDDING, NOR TO ANY BIDDER WHO IS AN AFFILIATE OF OR HAS A CORPORATE OFFICER, DIRECTOR, OR PRINCIPAL OWNER WHO IS A CORPORATE OFFICER, DIRECTOR, OR OWNER OF, ANOTHER PERSON WHO IS PRESENTLY DISQUALIFIED BY ALDOT. FURTHER DETAILS AND DEFINITIONS REGARDING THIS PROVISION ARE INCLUDED IN SECTION 102 OF SPECIAL PROVISION 12-LPA1.

THIS IS A FEDERALLY FUNDED PROJECT THROUGH ALDOT. THE PROPOSED WORK SHALL BE PERFORMED IN CONFORMITY WITH THE RULES AND REGULATIONS FOR CARRYING OUT THE FEDERAL HIGHWAY ACT AND OTHER ACTS AMENDATORY, SUPPLEMENTARY, OR RELATIVE THERETO. THIS PROJECT IS SUBJECT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT AND ITS IMPLEMENTING REGULATIONS. MBE/DBE PARTICIPATION IS ENCOURAGED; HOWEVER, NO SPECIFIC MBE/DBE GOALS HAVE BEEN ESTABLISHED FOR THIS PROJECT.

IN ACCORDANCE WITH TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, 78 STAT. 252, 42 U.S.C. 2000D TO 2000D-4 AND TITLE 49, CODE OF FEDERAL REGULATIONS, DEPARTMENT OF TRANSPORTATION, SUBTITLE A, OFFICE OF THE SECRETARY, PART 21, NONDISCRIMINATION IN FEDERALLY-ASSISTED PROGRAMS OF THE DEPARTMENT OF TRANSPORTATION ISSUED PURSUANT TO SUCH ACT, ALL BIDDERS ARE HEREBY NOTIFIED THAT IT WILL BE AFFIRMATIVELY ENSURED THAT IN ANY CONTRACT ENTERED INTO PURSUANT TO THIS ADVERTISEMENT, MINORITY BUSINESS ENTERPRISES WILL BE AFFORDED FULL OPPORTUNITY TO SUBMIT BIDS IN RESPONSE TO THIS INVITATION AND WILL NOT BE DISCRIMINATED AGAINST ON THE GROUNDS OF RACE, COLOR, RELIGION, SEX, OR NATIONAL ORIGIN IN CONSIDERATION FOR AN AWARD.

THE RIGHT TO REJECT ANY OR ALL BIDS IS RESERVED.

HONORABLE ROBERT CRAFT
MAYOR

NON-TRANSFERABLE SET No. _____

PROPOSAL

FOR THE CONSTRUCTION OF FEDERAL AID
PROJECT NO. STPTE-TE13(908)
PROJECT NO. TAPAA-TA13(923)
PROJECT NO. TAPAA-TA15(935)
CITY OF GULF SHORES
BALDWIN COUNTY, ALABAMA

DATE: _____

TIME : _____:_____M

PROPOSAL OF _____
(Name of Bidder)

LICENSE No. _____ OF _____
(Not Required to Bid) (Address)

for constructing the SIDEWALK IMPROVEMENTS in the City of Gulf Shores, County of Baldwin, State of Alabama.

The plans are composed of drawings identified as follows:

FEDERAL AID PROJECT NO. STPTE-TE13(908)
FEDERAL AID PROJECT. NO. TAPAA-TA13(923)
FEDERAL AID PROJECT NO. TAPAA-TA15(935)

The specifications are hereto attached.

TO THE MAYOR OF THE CITY OF GULF SHORES, ALABAMA:

SIR: The following proposal is made on behalf of the undersigned and no others. Submittal of this bid on these COMPLETE ORIGINAL DOCUMENTS furnished by the owner constitutes evidence of authority for the undersigned to bid on this project.

The undersigned has carefully examined the plans for this project, the Alabama Department of Transportation Standard Specifications for Highway Construction, 2012 Edition, including the special provisions hereto attached, and has also personally examined the site of work. On the basis of the specifications and plans the undersigned proposes to furnish all necessary machinery, tools, apparatus and other means of construction, and do all the work and furnish all material in the manner specified.

The undersigned further agrees to complete the entire project in one hundred eighty (180) working days. MBE/DBE participation is encouraged; however, no specific MBE/DBE goals have been established for this project.

The undersigned understands that the quantities below are approximate only and are subject to either increase or decrease and hereby proposes to perform any increased or decreased quantities of work in accordance with said Specifications. The undersigned

further understands and specifically agrees that in making this proposal, in case of error in the extension of prices in the bid, unit prices will govern.

Receipt of the following Addenda to these documents is hereby acknowledged by the undersigned (bidder to complete below):

ADDENDUM NO.	DATE ISSUED	ADDENDUM NO.	DATE ISSUED
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The undersigned understands and agrees that the above-listed Addenda are made, by reference, a part of this proposal document, the same as if they had been originally included herein.

In accordance with DIVISION 100 of the specifications, unless modified by special provisions included herein, the timetable for the award and execution of the contract, return of bid guaranties, and issuance of a work order ("Notice to Proceed") will be generally as follows (see specifications and special provisions for further details):

BID GUARANTIES RETURNED	
Successful Bidder.	**After contract & bonds executed and approved**. May be allowed to substitute bond for check after 30 days after bid opening.
Next 2 Lowest Bidders . . .	**15 days** after bid opening, or after successful bidder's contract and bonds approved if before the 15 days.
All others	**After bids tabulated and checked**.
AWARD OF CONTRACT	Within **30 days** after bid opening, or later if agreed to.
EXECUTION OF CONTRACT .	Contractor must execute within **15 days** after presentation for signature. May be extended no more than 5 days by owner.
APPROVAL OF CONTRACT. . .	Owner approves within **20 days** after presentation by contractor, unless contractor agrees to a longer period.
WORK ORDER ISSUED	Within **15 days** after approval and execution of contract by owner. May be extended by agreement.
TIME CHARGES BEGIN.	Within **15 days** of issuance of Work Order, or when work begins, whichever occurs first.

Any allowable extensions made in this timetable are to be made in writing.

CONTRACT SCHEDULE

WITH SPECIAL REGARD TO SPECIFICATION SECTION 102.06, "PREPARATION OF PROPOSAL", **AS REVISED BY THE SPECIAL PROVISIONS**, THE FOLLOWING REPRESENTS THE BIDDER'S SCHEDULE OF CONTRACT UNIT PRICES FOR THIS PROPOSAL (bidder to complete below):

LINE NO.	ITEM NO.	DESCRIPTION	QUANTITY & UNIT	UNIT PRICE	AMOUNT BID
1	206C-028	Removing Concrete	1400 SY	$	$
2	206D-002	Removing Curb	100 LF	$	$
3	206D-003	Removing Curb and Gutter	200 LF	$	$
4	210B-001	Swale / Ditch Grading	20 LF	$	$
5	210D-001	Borrow Excavation (Loose Truckbed Measurement)	50 CY	$	$
6	305B-077	Crushed Aggregate, Section 825, For Miscellaneous Use	20 Ton	$	$
7	408A-076	Planning Existing Pavement (Intersections)	100 SY	$	$
8	408A-077	Planning Existing Pavement (Side Streets & Driveways)	400 SY	$	$
9	424A-343	Superpave Bituminous Concrete Wearing Surface Layer, Patching, 1/2" Maximum Aggregate Size Mix, ESAL Range A/B	40 Ton	$	$
10	535A-239A	6" Side Drain Pipe (Sch. 40 PVC)	20 LF	$	$
11	600A-000	Mobilization	1 LS	$	$
12	618A-000	Concrete Sidewalk, 4" Thick	900 SY	$	$
13	618B-002	Concrete Driveway, 6" Thick	75 SY	$	$
14	618B-003	Concrete Driveway, 6" Thick (Includes Wire Mesh)	100 SY	$	$
15	619A-089	6" Side Drain Pipe End Treatment, Class 1	2 Each	$	$
16	620A-000	Minor Structure Concrete	1 CY	$	$
17	620A-100	Handicap Ramp Concrete	280 SY	$	$
18	650A-000	Topsoil	20 CY	$	$
19	652A-100	Seeding	0.2 Acre	$	$
20	654A-000	Solid Sodding	250 SY	$	$
21	656A-010	Mulching	0.2 Acre	$	$
22	659C-000	Erosion Control Product, Type S4	100 SY	$	$
23	665A-000	Temporary Seeding	0.2 ACRE	$	$
24	665B-000	Temporary Mulching	0.2 ACRE	$	$
25	665F-000	Hay Bales	20 Each	$	$
26	665J-002	Silt Fence, Type A	100 LF	$	$
27	665O-001	Silt Fence Removal	100 LF	$	$
28	665Q-002	Wattle	300 LF	$	$
29	674A000	Construction Safety Fence	300 LF	$	$
30	680A-000	Engineering Controls	1 LS	$	$

LINE NO.	ITEM NO.	DESCRIPTION	QUANTITY & UNIT		UNIT PRICE	AMOUNT BID
31	703A-002	Traffic Control Markings, Class 2, Type A	1500	SF	$	$
32	703D-001	Temporary Traffic Control Markings	1500	SF	$	$
33	710B-001	Roadway Sign Post (#3 "U" Channel Galvanized Steel)	70	LF	$	$
34	734E-031	Conduit PVC Schedule 40 2 Inch	200	LF	$	$
35	740B-000	Construction Signs	616	SF	$	$
36	740D-000	Channelizing Drums	40	Each	$	$
37	740E-000	Cones (36" High)	20	Each	$	$
38	740M-001	Ballast For Cones	20	Each	$	$
39	741C-010	Portable Sequential Arrow and Chevron Sign	1	EA	$	$
40	999A-002	Trail Timber Retaining Wall Cross-Tie	70	LF	$	$
Total Base Bid Amount						$

CONTRACT SCHEDULE

WITH SPECIAL REGARD TO SPECIFICATION SECTION 102.06, "PREPARATION OF PROPOSAL", **AS REVISED BY THE SPECIAL PROVISIONS**, THE FOLLOWING REPRESENTS THE BIDDER'S SCHEDULE OF CONTRACT UNIT PRICES FOR THIS PROPOSAL (bidder to complete below):

LINE NO.	ITEM NO.	DESCRIPTION	QUANTITY & UNIT		UNIT PRICE	AMOUNT BID
1	206C-028	Removing Concrete	1350	SY	$	$
2	206C-029	Removing Asphalt	100	SY	$	$
3	206D-002	Removing Curb	150	LF	$	$
4	206D-003	Removing Curb and Gutter	200	LF	$	$
5	210D-001	Borrow Excavation (Loose Truckbed Measurement)	100	CY	$	$
6	305B-077	Crushed Aggregate, Section 825, For Miscellaneous Use	50	Ton	$	$
7	408A-076	Planning Existing Pavement (Intersections)	50	SY	$	$
8	408A-077	Planning Existing Pavement (Side Streets & Driveways)	600	SY	$	$
9	424A-343	Superpave Bituminous Concrete Wearing Surface Layer, Patching, 1/2" Maximum Aggregate Size Mix, ESAL Range A/B	100	Ton	$	$
10	459C-001	Full Depth Saw Cut (Concrete)	120	LF	$	$
11	459C-002	Full Depth Saw Cut (Asphalt)	150	LF	$	$
12	600A-000	Mobilization	1	LS	$	$
13	618A-000	Concrete Sidewalk, 4" Thick	3100	SY	$	$
14	618B-002	Concrete Driveway, 6" Thick	200	SY	$	$
15	618B-003	Concrete Driveway, 6" Thick (Includes Wire Mesh)	100	SY	$	$
16	618B-008	Concrete Driveway, 6" Thick (High Early Strength)	50	SY	$	$
17	618B-009	Concrete Driveway, 6" Thick (Includes Wire Mesh, High Early Strength)	50	SY	$	$
18	618C-001	Truncated Dome	450	SF	$	$
19	620A-000	Minor Structure Concrete	20	CY	$	$
20	620A-100	Handicap Ramp Concrete, 4" Thick	80	SY	$	$
21	620A-101	Handicap Ramp Concrete, 6" Thick	30	SY	$	$
22	620A-102	Handicap Ramp Concrete, 6" Thick (Includes Wire Mesh)	30	SY	$	$
23	623B-002	Concrete Curb, Type A	100	LF	$	$
24	623C-000	Combination Curb & Gutter, Type C	300	LF	$	$
25	634A-015	Industrial Fence, 4 Feet High (P.V.C. Coated With Top Rail)	200	LF	$	$
26	638C-001	Post and Rail Round Style Wood Fence	100	LF	$	$
27	641R-510	3/4 Inch Water Meter and Box Reset	1	Each	$	$
28	641S-500	Valve Box Reset	15	Each	$	$
29	645K-500	Manhole Frame And Cover Reset	1	Each	$	$
30	645K-501	Manhole Frame And Cover Replacement	1	Each	$	$
31	650A-000	Topsoil	50	CY	$	$

LINE NO.	ITEM NO.	DESCRIPTION	QUANTITY & UNIT	UNIT PRICE	AMOUNT BID
32	652A-100	Seeding	1 Acre	$	$
33	654A-000	Solid Sodding	1100 SY	$	$
34	656A-010	Mulching	1 Acre	$	$
35	659C-000	Erosion Control Product, Type S4	2000 SY	$	$
36	663E-000	Tree Root Removal and Treatment	100 LF	$	$
37	665A-000	Temporary Seeding	1 ACRE	$	$
38	665B-000	Temporary Mulching	1 ACRE	$	$
39	665F-000	Hay Bales	100 Each	$	$
40	665J-002	Silt Fence, Type A	2500 LF	$	$
41	665O-001	Silt Fence Removal	2500 LF	$	$
42	665Q-002	Wattle	2000 LF	$	$
43	674A000	Construction Safety Fence	500 LF	$	$
44	680A-000	Engineering Controls	1 LS	$	$
45	701E-000	Solid Temporary Traffic Stripe	50 LF	$	$
46	701G-253	Solid White, Class 2, Type A Traffic Stripe (5" Wide)	50 LF	$	$
47	701G-265	Solid Yellow, Class 2, Type A Traffic Stripe (5" Wide)	50 LF	$	$
48	701H-000	Solid Traffic Stripe Removed (Paint)	50 LF	$	$
49	701H-001	Solid Traffic Stripe Removed (Plastic)	50 LF	$	$
50	703A-002	Traffic Control Markings, Class 2, Type A	3200 SF	$	$
51	703C-000	Removal Of Existing Traffic Control Markings Or Legends (Paint)	50 SF	$	$
52	703C-001	Removal Of Existing Traffic Control Markings Or Legends (Plastic)	50 SF	$	$
53	703D-001	Temporary Traffic Control Markings	3200 SF	$	$
54	707B-005	Type C Hazard Marker Installation	2 Each	$	$
55	710A-120	Class 4, Aluminum Flat Sign Panels 0.08" Thickness (Type III Or Type IV Background)	10 SF	$	$
56	710B-001	Roadway Sign Post (#3 "U" Channel Galvanized Steel)	100 LF	$	$
57	711A-000	Roadway Sign Relocation	10 Each	$	$
58	730Y-090	Relocation of Pedestal Pole and Foundation	7 EA	$	$
59	734E-031	Conduit PVC Schedule 40 2 Inch	300 LF	$	$
60	740B-000	Construction Signs	112 SF	$	$
61	740D-000	Channelizing Drums	40 Each	$	$
62	740E-000	Cones (36" High)	20 Each	$	$
63	740M-001	Ballast For Cones	20 Each	$	$
64	742A-003	Portable Changeable Message Sign, Type 3	1 Each	$	$
65	999A-002	Trail Timber Retaining Wall Cross-Tie	100 LF	$	$
Total Base Bid Amount					$

CONTRACT SCHEDULE

WITH SPECIAL REGARD TO SPECIFICATION SECTION 102.06, "PREPARATION OF PROPOSAL", **AS REVISED BY THE SPECIAL PROVISIONS**, THE FOLLOWING REPRESENTS THE BIDDER'S SCHEDULE OF CONTRACT UNIT PRICES FOR THIS PROPOSAL (bidder to complete below):

LINE NO.	ITEM NO.	DESCRIPTION	QUANTITY & UNIT		UNIT PRICE	AMOUNT BID
1	206C-028	Removing Concrete	1550	SY	$	$
2	206C-029	Removing Asphalt	450	SY	$	$
3	206D-002	Removing Curb	200	LF	$	$
4	206D-003	Removing Curb and Gutter	370	LF	$	$
5	210D-001	Borrow Excavation (Loose Truckbed Measurement)	100	CY	$	$
6	305B-077	Crushed Aggregate, Section 825, For Miscellaneous Use	50	Ton	$	$
7	408A-076	Planning Existing Pavement (Intersections)	50	SY	$	$
8	408A-077	Planning Existing Pavement (Side Streets & Driveways)	600	SY	$	$
9	424A-343	Superpave Bituminous Concrete Wearing Surface Layer, Patching, 1/2" Maximum Aggregate Size Mix, ESAL Range A/B	100	Ton	$	$
10	459C-001	Full Depth Saw Cut (Concrete)	220	LF	$	$
11	459C-002	Full Depth Saw Cut (Asphalt)	550	LF	$	$
12	600A-000	Mobilization	1	LS	$	$
13	618A-000	Concrete Sidewalk, 4" Thick	3200	SY	$	$
14	618B-002	Concrete Driveway, 6" Thick	250	SY	$	$
15	618B-003	Concrete Driveway, 6" Thick (Includes Wire Mesh)	150	SY	$	$
16	618B-008	Concrete Driveway, 6" Thick (High Early Strength)	30	SY	$	$
17	618B-009	Concrete Driveway, 6" Thick (Includes Wire Mesh, High Early Strength)	30	SY	$	$
18	618C-001	Truncated Dome	710	SF	$	$
19	620A-000	Minor Structure Concrete	20	CY	$	$
20	620A-100	Handicap Ramp Concrete, 4" Thick	80	SY	$	$
21	620A-101	Handicap Ramp Concrete, 6" Thick	30	SY	$	$
22	620A-102	Handicap Ramp Concrete, 6" Thick (Includes Wire Mesh)	30	SY	$	$
23	623B-002	Concrete Curb, Type A	100	LF	$	$
24	623C-000	Combination Curb & Gutter, Type C	300	LF	$	$
25	634A-015	Industrial Fence, 4 Feet High (P.V.C. Coated With Top Rail)	50	LF	$	$
26	638C-001	Post and Rail Round Style Wood Fence	50	LF	$	$
27	641R-510	3/4 Inch Water Meter and Box Reset	1	Each	$	$
28	641S-500	Valve Box Reset	10	Each	$	$
29	645K-500	Manhole Frame And Cover Reset	1	Each	$	$
30	645K-501	Manhole Frame And Cover Replacement	1	Each	$	$

CONTRACT SCHEDULE

WITH SPECIAL REGARD TO SPECIFICATION SECTION 102.06, "PREPARATION OF PROPOSAL", **AS REVISED BY THE SPECIAL PROVISIONS**, THE FOLLOWING REPRESENTS THE BIDDER'S SCHEDULE OF CONTRACT UNIT PRICES FOR THIS PROPOSAL (bidder to complete below):

31	650A-000	Topsoil	50	CY	$	$
32	652A-100	Seeding	1	Acre	$	$
33	654A-000	Solid Sodding	650	SY	$	$
34	656A-010	Mulching	1	Acre	$	$
35	659C-000	Erosion Control Product, Type S4	1500	SY	$	$
36	663E-000	Tree Root Removal and Treatment	100	LF	$	$
37	665A-000	Temporary Seeding	1	ACRE	$	$
38	665B-000	Temporary Mulching	1	ACRE	$	$
39	665F-000	Hay Bales	100	Each	$	$
40	665J-002	Silt Fence, Type A	200	LF	$	$
41	665O-001	Silt Fence Removal	200	LF	$	$
42	665Q-002	Wattle	2500	LF	$	$
43	674A000	Construction Safety Fence	500	LF	$	$
44	680A-000	Engineering Controls	1	LS	$	$
45	701E-000	Solid Temporary Traffic Stripe	100	LF	$	$
46	701G-253	Solid White, Class 2, Type A Traffic Stripe (5" Wide)	50	LF	$	$
47	701G-265	Solid Yellow, Class 2, Type A Traffic Stripe (5" Wide)	50	LF	$	$
48	701H-000	Solid Traffic Stripe Removed (Paint)	50	LF	$	$
49	701H-001	Solid Traffic Stripe Removed (Plastic)	50	LF	$	$
50	703A-002	Traffic Control Markings, Class 2, Type A	3680	SF	$	$
51	703C-000	Removal Of Existing Traffic Control Markings Or Legends (Paint)	50	SF	$	$
52	703C-001	Removal Of Existing Traffic Control Markings Or Legends (Plastic)	200	SF	$	$
53	703D-001	Temporary Traffic Control Markings	3680	SF	$	$
54	707B-005	Type C Hazard Marker Installation	2	Each	$	$
55	710A-120	Class 4, Aluminum Flat Sign Panels 0.08" Thickness (Type III Or Type IV Background)	10	SF	$	$
56	710B-001	Roadway Sign Post (#3 "U" Channel Galvanized Steel)	100	LF	$	$
57	711A-000	Roadway Sign Relocation	10	Each	$	$
58	730Y-090	Relocation of Pedestal Pole and Foundation	1	EA	$	$
59	734E-031	Conduit PVC Schedule 40 2 Inch	300	LF	$	$
60	740B-000	Construction Signs	112	SF	$	$
61	740D-000	Channelizing Drums	40	Each	$	$
62	740E-000	Cones (36" High)	20	Each	$	$

CONTRACT SCHEDULE

WITH SPECIAL REGARD TO SPECIFICATION SECTION 102.06, "PREPARATION OF PROPOSAL", **AS REVISED BY THE SPECIAL PROVISIONS**, THE FOLLOWING REPRESENTS THE BIDDER'S SCHEDULE OF CONTRACT UNIT PRICES FOR THIS PROPOSAL (bidder to complete below):

63	740M-001	Ballast For Cones	20	Each	$	$
64	742A-003	Portable Changeable Message Sign, Type 3	1	Each	$	$
65	999A-002	Trail Timber Retaining Wall Cross-Tie	100	LF	$	$
Total Base Bid Amount						$

TOTAL STPTE-TE13(908) _____

TOTAL TAPAA-TA13(923) _____

TOTAL TAPAA-TA15(935) _____

GRAND TOTAL _____

Project No.: STPTE-TE13(908) - TAPAA-TA13(923) - TAPAA-TA15(935)

City/County: Gulf Shores/Baldwin

Proposal No.: _____

Letting Date: _____

The undersigned hereby states that this Bid Proposal is to the best of their knowledge, their true and correct bid, except for changes initiated herein, and is submitting these bid sheets for review and consideration.

_____ _____

Contractor's Signature (Authorized Company Representative) Date

_____ _____

Other Contractor(s) Signature (if joint venture) (Authorized Company Representative) Date

FEDERAL-AID FUNDED PROJECTS

PLEASE READ AND COMPLETE SECTIONS A AND B. THE EXECUTION HEREINAFTER MADE ALSO CONSTITUTES THE EXECUTION OF THE PROPOSAL AND REPRESENTS THE AGREEMENT OF THE CONTRACTOR TO COMPLY WITH ALL DOCUMENTS CONTAINED IN THE PROPOSAL AND THOSE REFERRED TO THEREIN. FAILURE TO SUBMIT THE SWORN CERTIFICATION THROUGH PAGE 6 OF THIS NOTICE WILL BE CONSIDERED A NON-RESPONSIVE BID. BID BOND MUST BE SEPARATELY EXECUTED BY CONTRACTOR AND SURETY.

The contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in termination of this contract or such other remedy as the recipient deems appropriate.

The Statement Required To Be Submitted By Proposed Contractor Pursuant To Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246) and Regulations in 41 CFR Part 60-4 On All Federal and Federally-Assisted Contracts In Excess of $10,000 Will Be Included In the Award of Your Contract and Should Be Returned With Your Executed Contract.

The undersigned agrees that the terms and commitments contained herein shall not be constituted as a debt of the State of Alabama in violation of Article 11, Section 213 of the Constitution of Alabama, 1901, as amended by Amendment Number 26. It is further agreed that if any provision of this contract shall contravene any statute or Constitutional provision or amendment, either now in effect or which may, during the course of this contract, be enacted, then that conflicting provision in the contract shall be null and void.

The undersigned understands that in the event the term of this contract includes more than one fiscal year, said contract is subject to termination should funds not be appropriated for the continued payment of the contract in subsequent fiscal years.

The undersigned understands that in the event of the proration of the fund from which payment under this contract is to be made, the contract will be subject to termination.

Section A: The Alabama Department of Transportation is obligated on every Federal-aid project to implement, to the extent practical, 49CFR26,"Participation by Disadvantaged Business Enterprises (DBE) in U.S. DOT Financial Programs". This participation can be achieved by race neutral and/or race conscious means.

When race conscious means are used the contract goal for DBE participation will be indicated on **Page Two of the Proposal Cover Sheet** and in Section 111 of the Alabama Department of Transportation Standard Specifications for Highway Construction. Race neutral participation occurs when the contractor exceeds the indicated contract goal, or in the absence of a contract goal, obtains participation from a certified DBE that meets the CREDIT TOWARD PARTICIPATION portion of Section 111 of the Alabama Department of Transportation Standard Specifications for Highway Construction.

If the Department has determined that this project has sufficient opportunities for MBE/DBE participation the goal for this contract will be listed on **Page Two of the Proposal Cover Sheet**.

All bidders must complete form HR-DBE, "BIDDERS LIST OF QUOTERS FOR THE DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM."

If the contractor is low bidder for the project, it is understood the contractor will provide a DBE Utilization Plan which outlines the proposed percentage of DBE Utilization within ten (10) calendar days after notification by the Department of intent to award, along with documentation of the contractor's "Good Faith" efforts to utilize DBE firms if the proposed percentage of utilization is less than the designated project goal. The contractor's good faith efforts will fully comply with and meet all requirements, provisions and criteria of Title 49, Code of Federal Regulations, Part 26, including the criteria set forth in 49 CFR, Part 26, Appendix A and will comply with and meet the requirements, provisions and criteria set forth in Section 111 of the Alabama Department of Transportation

Standard Specifications for Highway Construction as all of such foregoing requirements, provisions and criteria are applicable to Disadvantaged Business Enterprises, all of which the contractor represents that he is familiar. The contractor understands that the good faith efforts of the contractor will be reviewed by the Department in keeping with all such requirements, provisions and criteria.

NOTE

The Department will advise the low bidder of his status as soon as possible after the opening of bids. A copy of the Department's DBE Utilization form has been attached to this proposal for use in complying with the Requirement.

Failure by the successful bidder to provide an acceptable DBE Utilization plan within the time frame required or failure of the successful bidder to make and document Good Faith Efforts, when applicable, will result in non-award of the contract to that bidder. If the contract is awarded to the next low bidder, the original low bidder will be prohibited from doing any work on the contract, either as subcontractor or in any other capacity. The original low bidder will also be prohibited from bidding on the project if it is re-advertised for letting. These restrictions shall apply to any other name under which the same person, individual, partnership, company, firm, corporation, association, co-operative or other legal entity that may be operating in which the principal owner(s) is involved.

Section B: CONTRACTOR'S CERTIFICATION

The contractor proposes to perform all "Force Account of Extra Work" that may be required on the basis provided in the Specifications hereto attached, and to give such work personal attention in order to see that it is economically performed.

The contractor further proposes to execute the Contract Agreement in a form to be attached as soon as the work is awarded to the contractor and to begin and complete the work within the respective time limit provided for in the Specifications hereto attached.

The contractor also proposes to furnish a Performance Bond, acceptable to the State, in an amount equal to the total amount of the contract. This bond shall serve not only to guarantee the completion of the work but also to guarantee the excellence of both workmanship and materials until the work is finally accepted. The contractor will also furnish a materialsman bond, acceptable to the State, equal to the amount of the contract.

The contractor encloses a cashier's check or bid bond for five percent (5%) of the bid, maximum $10,000.00, and hereby agrees that in case of failure to execute a contract and furnish bonds within fifteen (15) days after notice of award, the awarding authority shall retain from the proposal guaranty, if it is a cashier's check, or recover from the principal and/or the sureties, if the guaranty is a bid bond, the difference between the amount of the Contract as awarded and the amount of the proposal of the next lowest acceptable bidder, which amount shall not exceed $10,000.00.

If no other bids are received, the full amount of the proposal guaranty shall be so retained and/or recovered as Liquidated Damages for such default. It is understood that in case the work is not awarded to the contractor, the proposal guaranty, if a cashier's check, will be returned as provided in the Alabama Department of Transportation Standard Specifications for Highway Construction.

1. DISADVANTAGED BUSINESS ENTERPRISES

The contractor intends to comply with the contract documents to utilize Disadvantaged Business Enterprises (hereinafter referred to at times as (DBE)) to the extent practical and when, under Section A herein above, the contract documents specify a minimum monetary amount to be expended with Disadvantaged Business Enterprises, to equal or exceed said amount through subcontracting and/or by purchases of materials and services on the project.

It is understood that failure to submit a Disadvantaged Business Enterprise Plan, when such is required by the contract within the time frame so specified, will be cause for assessment of penalties as provided in the contract.

It is further understood that failure to comply with the contract relating to Disadvantaged Business Enterprises, when such are applicable, will be cause for the assessment of penalties as provided in the contract.

2. REQUIREMENT BY THE EQUAL EMPLOYMENT OPPORTUNITY REGULATIONS OF THE SECRETARY OF LABOR (41 CFR 60-1.7(b) (1))

THE CONTRACTOR MUST CHECK THE APPROPRIATE BOX BELOW:

The contractor submitting this proposal certifies that such contractor

HAS /_____/ HAS NOT /_____/

participated in a previous contract or subcontract subject to the Equal Opportunity Clause, as required by Executive Orders 10925, 1114 or 11246.

If the contractor checked the "HAS" box above, the following statement must be completed. The contractor submitting this proposal certifies that such contractor

HAS /_____/ HAS NOT /_____/

filed with the Joint Reporting Committee, the director of OFCC, any Federal Agency or the former President's Committee on Equal Employment Opportunity all reports due under the applicable filing requirements of those organizations. All reports due are considered to be those requested by one of these committees or agencies.

Concurrently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and who have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the director, Office of Federal Contract Compliance, U. S. Department of Labor.

3. COLLUSION

It is further certified that neither the person, firm, partnership or corporation submitting this bid, nor any of their officers, have directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this contract.

4. SUSPENSION/DEBARMENT

A. Certification Regarding Debarment, Suspension and Other Responsibility Matters - Primary Covered Transactions

Instructions for Certification

By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

The terms "covered transaction", "debarred", "suspended", "ineligible", "lower-tier covered transaction", participant", "person", "primary covered transaction", "principal", "proposal" and "voluntarily excluded" as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.

The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion/Lower-Tier Covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower-tier covered transactions and in all solicitations for lower-tier covered transactions.

A participant in a covered transaction may rely upon a certification of a prospective participant in a lower-tier covered transaction that it is not debarred, suspended, ineligible or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

Except for transactions authorized under these instructions, if a participant in a covered transaction knowingly enters into a lower-tier covered transaction with a person who is suspended, debarred, ineligible or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment Suspension and Other Responsibility Matters - Primary Covered Transactions

The prospective primary participant certifies, to the best of its knowledge and belief, that it and its principals:

Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency;

Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;

Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in the preceding paragraph of this

certification; and have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

B. For Lower-Tier Requirements, see Section XI of "Required Contract Provisions Federal-Aid Construction Contracts" located in the proposal.

Exceptions to the above are to be submitted on a separate sheet with the bid proposal. For any exception noted, indicate to whom it applies, initiating agency and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

5. LOBBYING RESTRICTIONS

These restrictions were established by Section 319 of Public Law 101-121 Department of the Interior and Related Agencies Appropriations Act for Fiscal Year 1990).

The contractor certifies to the best of his/her knowledge and belief that:

A. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement and the extension, continuation, renewal, amendment or modification of any Federal contract grant, loan or cooperative agreement.

B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of congress, an officer or employee of Congress or an employee of a Member of congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file this required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The contractor also agrees by submitting this proposal that he/she shall require that the language of this certification be included in all lower-tier subcontracts which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

I further certify that I am a properly authorized individual or corporate official, as applicable, to make this certification that the above is true and correct; and that I recognize, by signing this certification, I am also signing the contract proposal on behalf of the contractor in whose name the proposal is made, whether individual, partnership, or corporation as might be applicable.

NOTE: PROVIDED THE BID BOND ON THE FOLLOWING TWO PAGES IS PROPERLY EXECUTED IN THE CONTRACTOR'S NAME, SIGNED BY AN AUTHORIZED OFFICER OF THE CONTRACTOR CORPORATION (OR INDIVIDUAL OR PARTNER, WHEN NOT A CORPORATION), THE SAME MAY MAKE THE FOREGOING CERTIFICATIONS BY SIGNING BEFORE A PROPERLY SWORN NOTARY PUBLIC. THE CERTIFICATIONS MUST BE PROPERLY SWORN TO, SIGNED AND NOTARIZED BELOW.

Signature of Contractor. If the contractor is an **INDIVIDUAL**, signature of the individual is required; if contractor is a **CORPORATION**, signature of proper corporate officer is required; if contractor is a **PARTNERSHIP**, signature of partner is required; if contractor is **JOINT VENTURE**, appropriate signatures of all contractors are required.

Legal name of Contractor:

_____

(Partnership, Joint Venture, Corporation or Individual)

By: _____

(Signature of Officer or Individual, as applicable)

By: _____

IF JOINT VENTURE (Signature of Officers or Individual, as applicable)

The foregoing certifications are sworn to and subscribed before me on this

_____ day of _____, 20_____.

_____

NOTARY PUBLIC

AWARD WILL NOT BE CONFERRED UNLESS THIS FORM IS COMPLETED AND SIGNED AND WITNESSED BY A NOTARY.

NOTE: PROPOSAL WILL NOT BE ACCEPTED AND BIDS WILL NOT BE CONSIDERED UNLESS THIS FORM FOR BID BOND IS USED AND SIGNED BY PRINCIPAL AND SURETY, OR UNLESS A CASHIER'S CHECK (DRAWN ON AN ALABAMA BANK) IN THE PROPER AMOUNT IS FURNISHED.

FORM OF

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That the contractor, as **Principal**, and _____
(Name of

_____, as **Surety**, are held and firmly
Surety)

bound unto

THE CITY OF GULF SHORES

as **Obligee** in the full and just sum of five percent (5%) of amount bid (Maximum amount - $10,000.00), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said **Principal** is herewith submitting its proposal for Project Number **STPTE-TE13(908), TAPAA-TA13(923), AND TAPAA-TA15(935),** located in the City of Gulf Shores, County of Baldwin, State of Alabama.

The condition of this obligation is such that:

If the aforesaid **Principal** shall be awarded the contract and said **Principal** will, within the time required, enter into a formal contract and give a good and sufficient bond to secure the performance of the terms and conditions of the contract, then this obligation will be void; otherwise, the **Principal** and the **Surety** will pay unto the **Obligee** the difference in money between the amount of the contract as awarded and the amount of the proposal of the next lowest acceptable bidder, but not to exceed the total amount of the proposal guaranty. If no other bids are received, the full amount of the proposal guaranty shall be retained and/or recovered as liquidated damages for such default.

Witness our hands and seals this _____ day of _____, 20_____.
(Day) (Month) (Year)

SIGNATURE OF INDIVIDUAL BIDDER: (USE ONLY WHERE BIDDER IS AN INDIVIDUAL)

_____, Doing Business As, _____
(Name of Individual) (Business Name)
Business Mailing Address: _____
(Mailing Address)

NAME OF CORPORATION, PARTNERSHIP, OR JOINT VENTURE:

_____
(Name of Partnership, Joint Venture or Corporation*) - (If Two Corporations**)

Business Mailing
Address: _____ BY: _____ (L.S.)
(Signature and Position or Title of Officer Authorized to Sign Bids and Contracts for the Firm)
_____
(Address)

Business Mailing
Address: _____ BY: _____ (L.S.)
(Signature and Position or Title of Officer Authorized to Sign Bids and Contracts for the Firm)
_____
(Address)

Business Mailing
Address: _____ BY: _____ (L.S.)
(Signature and Position or Title of Officer Authorized to Sign Bids and Contracts for the Firm)
_____
(Address)

*(Corporate Seal)
Attest:

_____
(Secretary)

Name of State under the laws of which the Corporation was chartered:

_____
(State)

**(Corporate Seal)
Attest:

_____
(Secretary)

Name of State under the laws of which the Corportation was chartered:

_____
(State)

SURETY: _____
(Name of Surety)

BY (AGENT): _____
(Attorney in Fact)

AGENT'S ADDRESS: _____

_____
(Mailing Address)

NOTICE: VALID POWER OF ATTORNEY MUST BE ATTACHED.

PLEASE LEAVE ATTACHED IN YOUR BIDDING FORM

SPECIAL PROVISIONS
PROJECT NO. STPTE-TE13 (908)
PROJECT NO. TAPAA-TA13(923)
PROJECT NO. TAPAA-TA15(935)
CITY OF GULF SHORES
BALDWIN COUNTY, ALABAMA

The following Special Provisions are supplementary requirements and amendments to the Standard Specifications for Highway Construction, which apply to this project. The requirements and amendments given in these Special Provisions shall take precedence over the requirements given in the Standard Specifications. In case of conflict, the first three Special Provisions listed below shall take precedence over the remaining Special Provisions.

S.P. CODE	SPECIAL PROVISION
	Form FHWA-1273 – Revised May 1, 2012
12-LPA1	General Provisions for Projects let by LPA (no prequalification)
12-LPA4	Acceptance for Projects let by LPA
12-0097	Required Contract Provisions for all Federal Aid Projects for EEO
12-0101	Award & Execution of Contract (State Projects Only)
12-0198	Combination Bids
12-0220	Roadway Signs
12-0263(3)	Asphalt Pavement
12-0292	Fencing Materials
12-0309	Soil, Soil Aggregate, and Aggregate, Base, and Subbases
12-0335	Treated Wood
12-0351	Steel Reinforcement
12-0352(4)	Structural Steel, Fasteners, and Miscellaneous Metals
12-0353	Bridge and Sidewalk Handrail
12-0355	Mineral Filler, Hydrated Lime, Calcium Chloride, Brick, and Blocks
12-0356	Concrete Curing Materials
12-0358	Pipe Culvert Joint Sealers
12-0359	Coatings, Paints, Enamels, and Varnishes
12-0399(3)	Temporary Soil Erosion and Sediment Control
12-0426(2)	Liquidated Damages
12-0521	Definition of Terms
12-0599	Asphalt Materials
12-0604	Extension of Contract Time
12-0607	Contractor's Advertisement of Completion
12-0676	Structural Portland Cement Concrete
12-0731	Plant Topsoil
12-0769	Extra and Force Account Work
12-0879	Award and Execution of Contract
12-1118	Planing and Micro-Milling Existing Pavement
9001	Insurance Requirements
9002	Accident Prevention, Safety, and Protection of Property
9003	Cleanup, Maintenance, & Private Property
9004	Miscellaneous

9005	Work Schedule
9006	Tree Root Removal and Treatment
9007	Fencing
9008	Concrete & Handicap Ramp
9009	Tree & Shrub Transplantings, Removals, & Trimming
9010	Borrow Excavation (Loose Truckbed Measurement)
9011	Timber Retaining Wall
9012	Planing Existing Pavement (Intersections)
9013	Planing Existing Pavement (Intersecting Streets & Driveways)
9014	Crushed Aggregate Base Course, Type B, Plant Mixed
9015	Manhole Cover and Frame Adjustment and Replacement
9016	Relocation of Pedestrian Traffic Signal Activation Pedestals

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: July 2, 2010 Special Provision No. 12-LPA1

EFFECTIVE DATE: August 1, 2010

SUBJECT: General Provisions for Projects let by LPA (no prequalification)

Alabama Standard Specifications, 2012 Edition, shall be amended by the modification of SECTIONS 101, 102, 107, 109 and 110 as follows:

SECTION 101
DEFINITION OF TERMS

101.01 Definitions

This Article (101.01) shall be amended to include the following Subarticle:

(d) LOCAL PUBLIC AGENCY

This project is being advertised, let to contract, and administered by a Local Public Agency (henceforth referred to as LPA). The LPA is the awarding authority for the contract. The work shall be under the supervision of the LPA, but subject to the inspection and approval of the proper officials of the Alabama Department of Transportation (ALDOT). Such inspection shall in no sense make ALDOT a party to this contract and will in no way interfere with the rights of the Contractor or the LPA.

All references made in the standard specifications and in other related and included documents of this proposal, to ALDOT, the "State", the "Department" or "Highway Department", etc. shall be understood to mean the LPA for this project, except in any references made to ALDOT qualification procedures (including prequalification, disqualification, requalification), or to the LPA consulting or interacting with ALDOT, etc. All references made in the standard specifications and in other related and included documents of this proposal, to any of the representatives, employees, officials, bureaus, committees, laboratories and other facilities, physical address and contact information, etc. of ALDOT, the "State", the "Department" or "Highway Department", etc. shall be understood to mean the appropriate and applicable ALDOT or non-ALDOT person(s), parties, facilities, physical address and contact information, etc. as determined (in consultation with ALDOT personnel) and designated by the LPA for this project.

All references made in the standard specifications and in other related and included documents of this proposal, to ALDOT or State of Alabama Highway Department manuals, lists, forms, procedures, and other TECHNICAL publications and documents (including electronic and websites), shall remain intact and in full effect for this project unless otherwise indicated in the plans and proposal.

The term "owner", as used in this proposal and its related and included documents, shall be understood to mean the LPA for this project, except in those cases where it is clear that the term "owner" is used in reference to a party other than the LPA.

SECTION 102
PROPOSAL REQUIREMENTS AND CONDITIONS

102.02 Qualification of Bidders.

This Article shall be amended by deleting Article 102.02 as written and the following substituted in lieu thereof:

Contractor prequalification is not required to bid on this project. However, the award of the contract will not be made to any bidder who, at the time of the award, is considered by the Alabama Department of Transportation (ALDOT) to be disqualified from bidding, nor to any bidder who has a corporate officer, director, or principal owner who is a corporate officer, director, or owner of another person which is presently disqualified by ALDOT, nor to any bidder who is an affiliate of a person that is presently disqualified by ALDOT. A person who is considered disqualified by ALDOT shall not be considered disqualified for the purposes of this Section if, in the opinion of the LPA (in consultation with ALDOT personnel), satisfactory evidence is provided that the original reasons for the disqualification no longer exist. Disqualification (or lack of qualification) by ALDOT, based solely upon a person's merely not having initiated and/or completed ALDOT's formal application process for prequalification or requalification, shall not be considered as disqualification for the purposes of this Section.

For the purposes of this Section, the following definitions shall apply:

- an affiliate shall be defined as any person that controls, is controlled by, or is under common control with another person.

- a person shall be defined as an individual, a corporation, a partnership, an association, a joint stock company, a trust, or any unincorporated organization.

- control shall be defined as the ownership, directly or indirectly, of 10% or more of the voting securities of a person or if the person is not a corporation, an ownership interest, directly or indirectly of 10% or more of the person.

By entering into a contract with the LPA on this project, the Contractor agrees that ALDOT shall have the right to disqualify, or refuse to issue a proposal or award a contract for any future project(s) to, the Contractor, for any reason(s) related to this project which may be cause for disqualification under ALDOT's usual prequalification procedures, the same as if this project had been let to contract by ALDOT.

102.03 Contents of Proposal Form.

This Article shall be amended by deleting Subarticle (b) as written and the following substituted in lieu thereof:

(b) ADDENDA.

Minor changes, corrections, additions, and deletions to the proposal package may be put into effect by the LPA, in the form of Addenda. Prospective bidders to whom bid documents have been distributed prior to the release of respective Addenda will be notified of the Addenda by documented hand-delivery, certified or express type mail, facsimile, telegram, or other electronic media. Bidders shall acknowledge receipt of all Addenda, in writing, in the space so designated in the proposal.

102.06 Preparation of Proposal.

This Article shall be amended by deleting Subarticle (a) as written and the following substituted in lieu thereof:

(a) PROPOSAL FORM.

The bidder's proposal must be submitted on the complete original proposal form furnished him by the LPA. Proposal forms are numbered serially and are not transferable. Unless otherwise provided in the proposal, joint venturers may submit a proposal for a joint venture on a proposal form issued to one of them, provided each venturer has taken out a proposal and provided the proposal is signed by each co-venturer.

This Article shall be further amended by deleting Subarticle (b) as written and the following substituted in lieu thereof:

(b) DETAILS.

On the "CONTRACT SCHEDULE" included in the proposal form the bidder shall enter in figures a unit price and the extended amount bid (unit price X quantity) in the appropriate column for each bid item, exclusive of those items for which a fixed contract unit price and extension amount are shown. In all prices and amounts entered on the proposal form, the respective figures for dollars and cents shall be clearly separated by a single decimal. If the bidder desires to bid a fraction of a cent for the unit price, he can do so by entering up to four figures to the right of a decimal. On "lump sum" items an entry shall be shown in the amount bid column. If a bidder wishes to bid an item "free", then he shall enter "0.00" in the unit price column (if applicable) and "0.00" in the amount bid column. After all extensions are made, the bidder shall total the extended amounts of the bid items and show his total bid amount in the appropriate place on the proposal form.

Except as provided for in the following paragraph, where the "CONTRACT SCHEDULE" included in the proposal form lists alternate designs or packages (designated as "Alternates"), the bidder shall enter prices on Alternate-related items only for the Alternate which will be most economical for him to construct. All items not designated for a specific Alternate are common items for all Alternates. The bidder shall enter prices for all such common items, as well as for any items relating to the specific Alternate being bid. In the event that the bidder enters prices for more than one of the listed Alternates (except as provided for in the paragraph below), then the bid shall be considered to be based upon the lowest-priced Alternate.

If the CONTRACT SCHEDULE lists any Alternates as "Cumulative Alternates", then each Cumulative Alternate represents items which the owner may choose to include in the contract in addition to the items included in the "Base Bid". Prior to the award of the contract, the selection of any Cumulative Alternates to be included in the contract will be made by the LPA. The selection of Cumulative Alternates (or "Base Bid" with no Cumulative Alternates) will be made cumulatively in the order that they appear on the proposal form, from Base Bid to last Cumulative Alternate, skipping no Cumulative Alternates between the Base Bid and the last chosen Cumulative Alternate. The bidder shall enter prices on ALL Cumulative Alternates. Cumulative Alternates must be bid as a positive or zero ("$0.00") amount. No deductive Cumulative Alternates will be considered. If a negative amount is entered for a Cumulative Alternate, it will be considered as a zero additive. The low bidder and contract amount will be determined based upon the total amount bid for the Base Bid plus the additive amounts bid for any selected Cumulative Alternates.

If any item on the proposal form permits a choice between alternate specified types of materials, the bidder shall indicate by a check mark the type of material he proposes to use. If more than one type or none is checked, then the owner will make the selection. Permitted choices between alternate types of materials represent an option made available to the bidder for his convenience and economy in bidding a required item, and are not to be confused with formally designated "Alternates" or “Cumulative Alternates”, as discussed in the preceding two paragraphs.

All figures shall be legibly shown in ink or typed. Any interlineation, erasure, or other alteration of a figure shall be initialed by the signer of the proposal. The LPA will check the extension of each item given in the proposal and correct all errors and discrepancies. In case of a discrepancy between a unit bid price and the extension amount, the unit price shall govern. The sum of the extension amounts will be the contract bid price.

A pay item may be shown with a maximum allowable amount for the bid. The bidder shall enter an amount for the bid that is equal or less than the maximum allowable amount. If the bid entered is greater than the maximum allowable amount, the LPA will adjust the bid price to the maximum allowable amount for that item and recalculate the total bid amount.

A pay item may be shown with a minimum required amount for the bid. The bidder shall enter an amount for the bid that is equal to or greater than the minimum required amount. If the bid entered is less than the minimum required amount, the LPA will adjust the bid price to the minimum required amount for that item and recalculate the total bid amount.

This Article shall be further amended by deleting Subarticle (c) as written and the following substituted in lieu thereof:

(c) SIGNING.

The bidder's proposal must be signed with ink by the individual, by one or more members of the partnership, by one or more members or officers of each firm representing a joint venture, or by one or more officers of a corporation, or by an agent of the Contractor legally qualified and acceptable to the LPA. If the proposal is made by an individual, his name and business address must be shown; by a partnership, the name and business address of each partnership member must be shown; as a joint venture, the name and business address of each member or officer of the firms represented by the joint venture must be shown; by a corporation, the name of the corporation and the business address of its corporate officials must be shown.

The proposal bid bond, if bid bond is tendered, shall be properly signed by the bidder and the surety.

This Article shall be further amended by deleting Subarticle (e), COMPUTER BIDDING, in its entirety.

102.07 Irregular Proposals.

This Article shall be amended by deleting the Subarticle (a) as written and the following substituted in lieu thereof:

(a) GENERAL.

Proposals will be considered irregular and may be rejected if they contain any omissions, alteration of form, additions not called for, incomplete bids (includes failure to enter a unit bid price on a bid item or, in the case of an Alternate, the Alternate being bid by the Contractor, or on a Cumulative Alternate), interlineations, erasures or alterations not initialed by the person signing the proposal, or other irregularities of any kind. Proposals may be rejected at any time prior to the execution of the contract by the LPA.

Any bidder using the same or different names for submitting more than one proposal upon any project will be disqualified from further consideration on that project. Evidence that any bidder is interested, as a principal, in more than one proposal for work contemplated (for example bidding in a partnership, as a joint partnership or association, and as a partnership, association, or individuals) will cause the rejection of any such proposal. A bidder, however, may submit a proposal as a principal and as a Subcontractor to some other principal, or may submit a proposal as a Subcontractor to as many other principals as he desires, and by doing so will not be liable to disqualification in the intent of these Specifications.

102.08 Combination Bids.

This Article shall be amended by deleting Item 6 under Subarticle (a) as written and the following substituted in lieu thereof:

(a) COMBINATION BIDDING.

6. SUBMITTAL OF WRITTEN STATEMENT OF NOTIFICATION OF COMBINATION BID.

The bidder shall notify the LPA in writing of a bid that is being submitted as a combination bid. In order for a bid to be evaluated as a combination bid, prior to the opening of bids, the written notification must be enclosed in the sealed bid package envelopes of each bid that is being combined in a combination bid. Alternatively, it may also be transmitted to the awarding authority by facsimile. The Contractor shall be responsible for verifying that the facsimile has been received by the LPA prior to the opening of bids. The letter of notification of a combination bid shall:

- be addressed to the same LPA official as the proposal;
- describe the type of combination bid ("All or None", "Reduction in Unit Price", etc.);
- be dated no later than the date set for bid opening;
- be written on the bidder's letterhead;
- be signed by a person authorized to sign contracts for the bidder;
- contain a list of the project numbers included in the proposed combination bid.

This Article shall be further amended by deleting Subarticle (b) as written and the following substituted in lieu thereof:

(b) PROJECT LET BY LPA.

Combination bids will not be accepted on any project or projects let by a LPA unless it is in combination with, and only with, other project(s) being let at the same time (bids due at the same exact time) by the same LPA.

102.10 Delivery of Proposals.

This Article shall be amended by deleting Article 102.10 as written and the following substituted in lieu thereof:

Each proposal for each contract shall be placed, together with the proposal guaranty, in a sealed envelope on the outside of which is written in large letters "Proposals for Highway Work" or "Bid Proposal", and so marked as to indicate the project number, the name of the LPA (city, county, university, etc.), the town or city in which the work is located or, if not in a town or city, the name of the county in which the work is located, and the name of the bidder. Proposals will be received by the LPA at the location stated in the Notice to Contractors, until the hour and date set therein for the opening of bids. No proposal will be considered which has not been received prior to the hour and date set for the opening of bids. Proposals received after that time will be returned.

102.11 Withdrawal or Revision of Proposals.

This Article shall be amended by deleting Article 102.11 as written and the following substituted in lieu thereof:

A bidder may withdraw or revise a proposal after it has been deposited with the LPA, provided the request for such is received by the LPA in writing, or by facsimile or telegram before the time set for opening proposals. The request must bear the same signature(s) which the bidder has affixed to the proposal. No proposal may be modified or corrected after the time set for opening such proposals.

Withdrawal of proposals after bid opening will be permitted without forfeiture of bid guaranty only as provided for by, and when evidence of a mistake is furnished in accordance with, Section 39-2-11(d), Code of Alabama, 1975. Such evidence of mistake must be furnished no later than three working days after the opening of bids. Upon such withdrawal without forfeiture, the bidder shall be prohibited from (1) doing any work on the contract, either as a subcontractor or in any other capacity, and (2) bidding on the same project if it is readvertised for letting.

102.13 Multiple Bids.

This Article (102.13) shall be deleted in its entirety.

SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

107.21 Stormwater Management, Spill Prevention, and Debris Removal.

This Article shall be amended by deleting Subarticle (c) as written and the following substituted in lieu thereof:

(c) NPDES NOTICE OF INTENT

A "Notice of Intent" (NOI) is an application filed with the Alabama Department of Environmental Management (ADEM) requesting National Pollutant Discharge Elimination System (NPDES) registration. If an NOI has been filed or is required for the project site, the awarding authority will be the OWNER of record with ADEM for the NOI. The Contractor shall be the OPERATOR and shall comply with all requirements of the NOI.

A Project Note will be shown on the plans to indicate whether or not an NOI has been filed with ADEM and the availability of a Construction Best Management Practices Plan (CBMPP) for the project. If an NOI has not been filed, the note may further indicate that the Contractor is required to file an NOI at his own expense.

The Contractor shall be responsible for obtaining applicable NPDES permit coverage through ADEM for all material pits, waste areas, plant sites, haul roads and other off-site areas selected by the Contractor to construct the project. Copies of the written acknowledgement from ADEM verifying that permit coverage has been obtained shall be forwarded to the Engineer as part of the Contractor's Stormwater Management Plan before ground is disturbed in these areas.

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SECTION 110
CLAIMS

110.04 Claims Process.

This Article shall be amended by deleting Article 110.04 as written and the following substituted in lieu thereof:

(a) GENERAL.

After the work has been completed on the disputed item(s) of work, the Contractor shall have 90 calendar days to submit his claim. Any claim not submitted within this 90 calendar day period is waived. The Contractor shall submit six copies of the claim, containing the required documentation listed in Article 110.03, to the LPA. Once the claim is received, the LPA will review the claim submittal in accordance with its local policies and procedures.

(b) PARTICIPATION AND REVIEW BY ALDOT.

If the LPA desires for ALDOT to participate in the possible funding of the Contractor's claim, provided the claim is determined to be valid and funding is available, the LPA shall notify ALDOT of the Contractor's notice of intent to file a claim, and any meetings,

hearings, etc. In addition, the LPA shall provide a copy of the Contractor's claim when it is submitted, and then the LPA's written response based on their review. Failure of the LPA to notify ALDOT of the notice of intent and any associated meetings and submittals shall constitute a waiver by the LPA for any possible funding by ALDOT.

The claim and the LPA's response will be reviewed by the Regional Engineer within 30 calendar days after the LPA has submitted it to the administering division. The Regional Engineer will review the claim and prepare a recommendation for ALDOT's level of funding participation. The Regional Engineer's recommendation will be reviewed by the chairman of ALDOT's Claims Committee, and a response provided back to the Region within 30 calendar days. The review and response by the Regional Engineer and chairman of the Claims Committee in the amount of ALDOT funding for the claim shall be final, non-appealable and not subject to judicial or other review. Their decision is binding with the LPA.

Even if the claim is determined to be valid, ALDOT's level of funding will be based on the amount of monies remaining in the project agreement with the LPA.

110.06 Auditing of Claims.

This Article shall be amended by deleting the first paragraph and the following substituted in lieu thereof:

All claims submitted by the LPA to ALDOT shall be subject to audit by the Department's External Auditor at any time following the filing of such claim. The audit may begin on ten day's notice to the LPA, Contractor, Subcontractor, or Supplier. The LPA, Contractor, Subcontractor, or Supplier shall cooperate with the auditors. Failure of the LPA, Contractor, Subcontractor, or Supplier to maintain and retain sufficient records to allow the Department's auditor to verify the claim shall constitute a waiver of that portion of such claim that cannot be verified and shall bar recovery thereunder.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: January 27, 2010 Special Provision No. 12-LPA4

EFFECTIVE DATE: February 1, 2010

SUBJECT: Acceptance for Projects let by LPA

Alabama Standard Specifications, 2012 Edition, shall be amended by the modification of SECTION 105 as follows:

SECTION 105
CONTROL OF WORK

105.15 Acceptance.

This Article shall be amended by deleting Article 105.15 as written and the following substituted in lieu thereof:

(a) CONSTRUCTION ACCEPTANCE INSPECTION.

Whenever the LPA considers the work provided for and contemplated by the contract is nearing completion, or within two weeks of written notice of presumptive completion of the entire project by the Contractor, the LPA and all pertinent personnel (its representatives, ALDOT Region, FHWA) will inspect all work in the contract. The Contractor should not presume completion of the entire project until permanent vegetation is established. If the LPA finds that the work has not been satisfactorily completed at the time of the inspection, the Contractor will be advised in writing as to the work to be done or the particular defects to be remedied to place the work in condition for acceptance for maintenance purposes. The Contractor will have a maximum of four weeks to correct and complete the items listed. Time charges should resume if the work is not completed in the four weeks.

(b) PARTIAL ACCEPTANCE FOR MAINTENANCE.

When requested by the Contractor in writing, the LPA may consider accepting a portion of the contract for maintenance prior to all items of work being completed. This will apply to vegetation establishment being restricted by seasonal limitations and all other contract items of work are complete. Once a satisfactory application of seed prescribed by the tables in Section 860 for Fall or Winter has been completed, time charges may be suspended or extended based on seasonal limitations in accordance with 108.07(c) or 108.09. Time charges should resume based on the first available date in the Spring to apply permanent vegetation as shown in the seed mix tables.

The LPA, with concurrence from ALDOT, will notify the contractor that they will assume maintenance of specific items or operations of work and will also indicate which items are not accepted. The partial acceptance letter to the contractor should also detail the disposition of time charges as indicated in the paragraph above.

Additional costs for completing the remaining items of work as a consequence of a partial acceptance such as traffic control and remobilization shall be borne by the Contractor. Partial acceptance shall in no way void or alter any terms of the contract.

Once the permanent vegetation has been satisfactorily established and any other pending item of work is completed, the LPA will accept the remaining items of work and assume maintenance of the project henceforth.

(c) FINAL ACCEPTANCE.

1. GENERAL.

Upon due notice from the Contractor upon presumptive completion of the remaining items of work in Subarticles (a) and (b) above, the LPA and all pertinent personnel will make an inspection. If all construction provided for and contemplated by the contract is satisfactorily completed, that inspection shall constitute the final inspection.

2. VEGETATION BONDS.

When directed by the LPA, the Contractor shall provide a vegetation bond covering sustained growth of established or planted vegetation. The bond shall be of sufficient value to cover all costs associated with the replanting or reestablishment of the vegetation should it become necessary. The dollar amount of the bond shall cover all costs for the labor, materials, and equipment required for traffic control, temporary erosion and sediment control, and permanent vegetation establishment. The period of time covered by the bond will not be required to be greater than 12 months unless shown otherwise on the plans. Vegetation bonds should not be used as a substitute for established vegetation of a permanent species.

3. ACCEPTANCE FOR MAINTENANCE.

Upon satisfactory completion of the work as noted in Item 105.15(c)1. above, the LPA will notify ALDOT that the contractor has completed all work required by the contract. After ALDOT has concurred with the LPA's recommendation, the LPA will advise the Contractor in writing that the work has been accepted and the LPA will assume the maintenance thereof subject to the "record check" of materials and workmanship.

4. NPDES TERMINATION.

Within 10 days of Acceptance for Maintenance, the LPA will requests NPDES Permit Termination as outlined in Subarticle 107.21(d). The Contractor shall be responsible for stormwater runoff control on the project until the NPDES Permit is terminated or 30 calendar days after the LPA's request for termination has been processed, whichever is less. The Contractor is also responsible for correcting problems associated with onsite erosion and off site sedimentation deposition during this time.

5. CONTRACTOR'S ADVERTISEMENT OF COMPLETION.

The Contractor, immediately after receiving notice of Acceptance for Maintenance, shall give notice of said completion by an advertisement for a period of four successive weeks in some newspaper in general circulation published within the county in which the project is located. If the project is located in more than one county, an advertisement shall be given in a newspaper of general circulation published within each county in which the project is located. Proof of publication of said notice shall be made by the Contractor to the LPA, by affidavit of the publisher, and a printed copy of the published notice. If a newspaper is not published in a county where work is done, the notice may be given by posting at the Court House for 30 days and proof of same shall be made by the Probate Judge or Sheriff and the Contractor.

6. WRITTEN NOTICE OF FINAL ACCEPTANCE.

After completion of all requirements noted in this Article and Article 109.12, the LPA will process the Final Estimate for payment. At this time, the LPA will give the Contractor written notice that the project is completed, and will specify that date as Final Acceptance.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: November 10, 2011 Special Provision No. 12-0097

EFFECTIVE DATE: January 1, 2012

SUBJECT: Required Contract Provision for all Federal Aid Projects for Equal Employment Opportunity

Alabama Standard Specifications, 2012 Edition, are hereby amended to include the following:

In compliance with Executive Order 11246, the following Standard Federal Equal Opportunity Construction Contract Specifications shall apply:

General Requirements
(41 CFR 60-4.3)

1. As used in these specifications:
   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return. U.S. Treasury Department Form 941;
   d. "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent or the Pacific islands); and
      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract, in excess of $10,000, the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing

construction work in geographical areas where they do not have a federal or federally-assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are as shown on Attachment No. 1. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications. Executive order 11246 or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
    a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
    b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization’s responses.
    c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant, and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
    d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meets its obligations.
    e. Develop on-the-job training opportunities and/or participate in training programs for the areas which expressly include minorities and women, including upgrading programs, and apprenticeship and trainee programs, relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.
    f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their co-operation in assisting the Contractor in meeting its EEO obligations by including it in any policy manual and collective bargaining agreement, by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
    g. Review at least annually the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc. prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct at least annually an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated, except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors, adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations that assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor-union, contractor-community or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contract may be in violation of the Executive Order if a specific minority group of women is under-utilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of the Federal Contract Compliance Programs. Any

Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public works Employment Act of 1977 and the Community Development Block Grant Program).

Hometown Plans
(41 CFR 60-4.2)

(a) A contractor participating, either individually or through an association, in an approved Hometown Plan (including heavy highway affirmative action plans) shall comply with its affirmative action obligations under Executive Order 11246 by complying with its obligations under the plan: Provided, that each contractor or subcontractor participating in an approved plan is individually required to comply with the equal opportunity clause set forth in 41 CFR 60-1.4; to make a good faith effort to achieve the goals for each trade participating in the plan in which it has employees; and that the overall good performance by other contractors or subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan's goals and timetables. If a Contractor is not participating in an approved Hometown Plan it shall comply with the Specifications set forth in §60-4.3 of this part and with the goals and timetables for the appropriate area as listed in the Notice required by 41 CFR 4.2 with regard to that trade. For the purposes of this part 60-4, the contractor is not participating in a Hometown Plan for a particular trade if it:
    (1) Ceases to be signatory to a Hometown Plan covering that trade.
    (2) Is signatory to a Hometown Plan for that trade but is not party to a collective bargaining agreement for that trade:
    (3) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with labor organizations which are not or cease to be signatories to the same Hometown Plan for that trade.
    (4) Is signatory to a Hometown Plan for that trade and is party to a collective bargaining agreement with labor organization for that trade but the two have not jointly executed a specific commitment to minority and female goals and timetables and incorporated the commitment in the Hometown Plan for that trade:
    (5) Is participating in a Hometown Plan for that trade which is no longer acceptable to the Office of Federal Contract Compliance Programs:
    (6) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with a labor organization for that trade and the labor organization and the contractor have failed to make a good faith effort to comply with their obligations under the Hometown Plan for that trade.

(b) Contractors participating in Hometown Plans must be able to demonstrate their participation and document their compliance with the provisions of the Hometown Plan.

Solicitations

(41 CFR 60-4.2)

(d) The following notice shall be included in, and shall be a part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of $10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part (see 41 CFR-4.2 (a)):

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offerer's or Bidder's attention is called to the "Equal opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as shown on Attachment No. 1.
   These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally-involved and nonfederally involved construction.
   The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Employment Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CPR Part 60-4. Compliance with the goals will be measured against the total work hours performed.
3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is that shown on Attachment No. 1.

Show Cause Notice
(41 CFR 60-4.8)

If an investigation or compliance review reveals that a construction contractor or subcontractor has violated the Executive Order, any contract clause, specifications or the regulations in this chapter and if administrative enforcement is contemplated, the Director shall issue to the contractor or subcontractor a notice to show cause which shall contain the items specified in (i) - (iv) of 41 CFR 60-2.2 (c)(1) - If the Contractor does not show good cause within 30 days, or, in the alternative, fails to enter an acceptable conciliation agreement which includes where appropriate, make-up goals and timetables, back pay, and seniority relief for affected class members, the compliance agency shall follow the procedure in 41 CFR 60-1.26(b) : Provided that where a conciliation agreement has been violated, no show cause notice is required prior to the initiation of enforcement proceedings.

Attachment No. 1

Goals & Timetables
(41 CFR 60-4.2)

The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

FEMALE

Area Covered – Statewide

Timetable	Trade	Goals %
Until Further Notice	All	6.9%

MINORITY

Area Covered – Etowah, Jefferson, Shelby, St. Clair & Walker Counties

Timetable	Trade	Goals %
Until Further Notice	All	24.9%

Area Covered –Autauga, Barbour, Bullock, Butler, Coffee, Coosa, Covington, Crenshaw, Dale, Dallas, Elmore, Geneva, Henry, Houston, Lowndes, Macon, Montgomery, Perry, Pike & Tallapoosa Counties

Timetable	Trade	Goals %
Until Further Notice	All	29.9%

Area Covered – Tuscaloosa County

Timetable	Trade	Goals %
Until Further Notice	All	20.6%

Area Covered – Russell County

Timetable	Trade	Goals %
Until Further Notice	All	29.6%

Area Covered – Franklin, Lawrence & Morgan Counties

Timetable	Trade	Goals %
Until Further Notice	All	11.2%

Area Covered – Dekalb & Jackson Counties

Timetable	Trade	Goals %
Until Further Notice	All	8.6%

Area Covered – Baldwin & Mobile Counties

Timetable	Trade	Goals %
Until Further Notice	All	25.9%

Area Covered – Choctaw, Clarke, Conecuh, Escambia, Marengo, Monroe, Washington & Wilcox Counties

Timetable	Trade	Goals %
Until Further Notice	All	26.4%

Area Covered – Calhoun County

Timetable	Trade	Goals %
Until Further Notice	All	14.3%

Area Covered – Bibb, Blount, Cherokee, Chilton, Clay, Cleburne, Cullman, Fayette, Greene, Hale, Lamar, Marion, Pickens, Randolph, Sumter, Talladega & Winston Counties

Timetable	Trade	Goals %
Until Further Notice	All	20.7%

Area Covered – Limestone, Madison & Marshall Counties

Timetable	Trade	Goals %
Until Further Notice	All	12.0%

Area Covered – Chambers & Lee Counties

Timetable	Trade	Goals %
Until Further Notice	All	31.6%

Area Covered – Colbert & Lauderdale Counties

Timetable	Trade	Goals %
Until Further Notice	All	11.9%

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: October 31, 2011 Special Provision No. 12-0101

EFFECTIVE DATE: January 1, 2012

SUBJECT: Award and Execution of Contract (State Projects Only).

Alabama Standard Specifications, 2012 Edition, SECTION 103 shall be amended as follows:

SECTION 103
AWARD AND EXECUTION OF CONTRACT

103.02 Award of Contract.

(a) GENERAL.

This Subarticle shall be amended to include the following:

In the letting of public contracts in which any state, county or municipal funds are utilized, except those contracts funded in whole or in part with funds received from a federal agency, preference shall be given to resident contractors, and a nonresident bidder domiciled in a state having laws granting preference to local contractors shall be awarded Alabama public contracts only on the same basis as the nonresident bidder's state awards contracts to Alabama contractors bidding under similar circumstances; and resident contractors in Alabama, as defined in Section 39-2-12, Code of Alabama 1975, be they corporate, individuals or partnerships, are to be granted preference over nonresidents in awarding of contracts in the same manner and to the same extent as provided by the laws of the state of domicile of the nonresident."

Nonresident bidders must accompany any written bid documents with a written opinion of an attorney at law licensed to practice law in such nonresidents bidders' state of domicile, as to the preferences, if any or none, granted by the law of that state to its own business entities whose principal places of business are in that state in the letting of any or all public contracts."

A non-resident contractor shall provide a letter as noted above attached to each bid submitted. This letter shall be addressed to the Transportation Director and be dated no earlier than four (4) weeks prior to the date of bid opening. At least one original shall be provided for each letting; machine copies will be acceptable if more than one bid is submitted. Failure to comply with the provisions of this Special Provision shall cause the bid to be rejected.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: February 29, 2012 Special Provision No. 12-0198

EFFECTIVE DATE: April 1, 2012

SUBJECT: Combination Bids.

Alabama Standard Specifications, 2012 Edition, SECTION 102 shall be revised as follows:

SECTION 102
PROPOSAL REQUIREMENTS AND CONDITIONS

102.08 Combination Bids.

(a) COMBINATION BIDDING

This Subarticle (102.08(a)) shall be modified by replacing Item 7 with the following:

7. UNACCEPTABLE COMBINATION BIDS.

A combination bid in which the bidder proposes that a lump sum be deducted from the final estimate is unacceptable. A combination bid in which the bidder proposes that a reduction in prices be made on a percentage basis is unacceptable. Unacceptable proposals for combination bids will be considered irregular by the Department and will be rejected.

(b) COUNTY FINANCED PROJECTS.

This Subarticle (102.08(b)) shall be replaced by the following:

(b) CITY AND COUNTY FINANCED PROJECTS.

Combination bids will not be accepted on any project or projects wholly or partially financed by a city unless all of the projects in the combination bid are city financed projects located in the same city.

Combination bids will not be accepted on any project or projects wholly or partially financed by a county unless all of the projects in the combination bid are county financed projects located in the same county.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: August 7, 2012 Special Provision No. 12-0220

EFFECTIVE DATE: November 1, 2012

SUBJECT: Roadway Signs.

Alabama Standard Specifications, 2012 Edition, Section 710 and Section 880 shall be amended as follows:

SECTION 710
ROADWAY SIGNS

710.01 Description

This Article (710.01) shall be replaced by the following:

710.01 Description

This Section shall cover the work of furnishing and erecting roadway signs of the various types, sizes, wording, marking, etc., detailed by the plans in accordance with the latest edition of the MUTCD except as modified herein or by the plan details. The type and number of signs, sign supports, backing frames when required, foundations and reflectorization to be furnished and installed shall be as detailed on the plans. Concrete foundations, when required, shall be constructed as shown on the plans or as directed by the Engineer.

The items of work for Roadway Signs will indicate whether the sign is of a reflectorized or non-reflectorized type, and the kind of backing material.

Sheeting used in the fabrication of sign faces shall be one of the following types unless required otherwise on the plans or in the proposal:

TYPES AND DESCRIPTIONS OF SIGN SHEETING	
Type I	Medium-intensity retroreflective sheeting, "engineering grade"
Type I-N	Non-reflective sheeting
Type II	Medium-high-intensity retroreflective sheeting, "super engineering grade"
Type III	High-intensity retroreflective sheeting
Type IV	High-intensity retroreflective sheeting, "microprismatic"
Type V	Super-high-intensity retroreflective sheeting, "microprismatic"
Type VI	Elastomeric high-intensity retroreflective sheeting without adhesive, "microprismatic"
Type VII	Sheeting previously classified as Type VII has been reclassified as Type VIII. The designation of Type VII has been discontinued. (ASTM D 4956-09)
Type VIII	Super-high-intensity retroreflective sheeting (ASTM D 4956 Table 2) , "microprismatic"
Type IX	Very-high-intensity retroreflective sheeting, "microprismatic"
Type X	Sheeting previously classified as Type X has been reclassified as Type VIII. The designation of Type X has been discontinued. (ASTM D 4956-09)
Type XI	Super-high-intensity unmetalized cube corner microprismatic retroreflective sheeting. (ASTM D 4956-09, Table 10)

CLASSES AND DESCRIPTIONS OF SIGNS	
Class 1	Non-reflectorized Background with Type III Reflectorized Demountable Copy
Class 1A	Non-reflectorized Background with Non-Reflectorized Demountable Copy
Class 2	Type III or IV Reflectorized Sheeting Background with the same Type Reflectorized Sheeting Demountable or Cut-Out Copy
Class 2A	Type III or IV Reflectorized Sheeting Background with Non-Reflectorized Demountable or Cut-Out Copy. For Multiple Extruded Panels, Type XI Reflectorized Sheeting Background with Digital Printing is also allowable.
Class 3	Non-reflectorized Background with Screen Copy
Class 4	Type III or IV Reflectorized Background with Screen Copy
Class 5	Type IV, or VIII Reflectorized Sheeting Background with Screen Copy
Class 6	Type III or IV Reflectorized Sheeting Background with Type VIII or IX Reflectorized Sheeting Demountable or Cut-out Copy. For Multiple Extruded Panels, Type XI Reflectorized Sheeting Background with Digital Printing is also allowable.
Class 7	Type IV, VIII, or IX Reflectorized Sheeting Background with Screen Copy
Class 8	Type VIII or IX Reflectorized Sheeting Background with Screen Copy

When the Contractor has the choice of selecting the sheeting Type within a respective Class, the mixing of different sheeting types on signs on the same project will not be allowed unless shown otherwise on the plans or in the proposal.

In addition to the Classes noted above, signs will be designated by the method of fabrication as follows:

Flat Panel.

A sign face which can be fabricated from a single sheet of material normally not in excess of 4 feet {1200 mm} in width.

Multiple Flat Panel.

A sign face which because of size can not be fabricated from a single sheet of material. These panel sections shall be fabricated from sheets not less than 4 feet {1200 mm} in width, except that only one sheet for any one sign may be cut to less than 4 feet {1200 mm} in width to fabricate signs which are not multiples of 4 feet {1200 mm} in width. Multiple flat panel sign sections shall run from top edge to bottom edge of sign face without horizontal joints, except that signs greater than 11 feet {3.4 m} in height may have a horizontal joint but no sign shall have more than one horizontal joint.

The use of material sheets of greater width than the minimum 4 feet {1200 mm} noted to form sign panels will be acceptable; however, the backing, support, etc. must conform to the plan requirements for this classification of panel.

All panel joints shall be provided with backing strips firmly affixed to the sign to keep the panel sections in proper alignment as detailed on the plans.

Multiple Extruded Panels

Multiple panel signs may be made of extruded sections. All extruded sections shall be 12 inches {300 mm} wide mounted horizontally and shall have no vertical joints. All panels shall be flat and straight. Multiple extruded panel signs shall be limited to Class 6 and Class 2A signs. Exceptions will be made to allow 6 inch {150 mm} wide extruded sections in cases where the height of a sign or exit panel dictates. There shall not be more than one 6 inch {150 mm} wide panel allowed per individual sign or exit panel.

Aluminum Laminated Panels.

These sign face panels shall consist of sheet aluminum laminated to a honeycomb core, sealed completely around the perimeter with an extruded aluminum frame to form a surface of the length, width and depth required.

Aluminum Louvered Panels.

These sign face panels shall consist of aluminum louvers assembled in such a manner as to provide a rigid sign panel which will have a wind loading normal to the face of the sign of at least 50 percent less than that of a solid panel of the same size and yet provide an opaque background when viewed from an angle of 10° or less below the horizontal line of sight.

710.05 Basis of Payment.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

Subarticle 710.05(b) shall be replaced by the following:

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

710-A Class __*__, __**__ Sign Panels __***__ - per square foot {square meter}

710-B Roadway Sign Post (Description & Size) - per linear foot {meter}

710-C Removal of Existing Roadway Signs - per lump sum

* Appropriate Class

** Aluminum Flat
Steel Flat
Aluminum Multiple Flat
Aluminum Multiple Extruded
Steel Multiple Flat
Aluminum Laminated
Aluminum Louvered

*** Approximate thickness of panel material desired.

SECTION 880
SIGN MATERIALS

880.04 Sign Supports.

(a) GROUND MOUNTED SIGN SUPPORTS.

2. STEEL POSTS.

d. Post Finish.

Subitem 880.04(a)2d shall be replaced with the following:

d. Post Finish.

Standard posts shall be hot dipped zinc galvanized after fabrication in accordance with ASTM A 123 for beam shape and ASTM A 53 for tubular shape.

Light weight {mass} or bendaway posts shall be zinc galvanized in accordance with the following:

"U" Channel Section - ASTM A 123 after fabrication.

Tubular Section - ASTM A 653, Grade G90 or better. An alternate coating may be an in-line hot dip galvanized zinc coating per ASTM B 6, followed by a chromate conversion coating and cross-linked polyurethane acrylic exterior coating, with the inside surface given a double in-line application of a full zinc-based organic coating.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: May 13, 2014 Special Provision No. 12-0263(3)

EFFECTIVE DATE: June 1, 2014

SUBJECT: Asphalt Pavement.

Alabama Standard Specifications, 2012 Edition, shall be amended by modifying Section 106 and by replacing Sections 410, 420, 423, and 424 as follows:

SECTION 106
CONTROL OF MATERIALS

106.09 Quality Control and Quality Assurance (QC/QA) Requirements for Hot Mix Asphalt (HMA) Pavement.

Article 106.09 shall be replaced with the following:

106.09 Quality Control and Quality Assurance (QC/QA) Requirements for Hot Mix Asphalt (HMA) Pavement.

(a) GENERAL.

The following modifications apply only to the materials and work performed under Sections 327, 410, 420, 423 and 424.

In all cases, the Department's testing will be separate from the Contractor's testing and both shall be conducted by certified technicians.

All **Quality Control** aspects of this provision shall be the responsibility of the Contractor. Quality Control is defined as the activities that are related to the production of Hot Mix Asphalt Pavement which meet all the requirements of the Specifications, including mix design, process control testing, sampling and acceptance testing (when so designated by the Department) for determination of Pay Factors, and necessary adjustments to the production process.

All **Quality Assurance** aspects of this provision shall be the responsibility of the Department and will be accomplished in the following ways:

1. By conducting assurance/verification testing, on a random basis, of independent samples obtained by the Department, at a frequency of one or more per day;
2. By periodically observing tests performed by the Contractor;
3. By monitoring required Contractor control charts exhibiting test results of control parameters.

All Superpave Gyratory Compactors shall have their angle of gyration verified by the Engineer following the procedure in AASHTO T 344, "Standard Method of Test for Evaluation of Superpave Gyratory Compactor (SGC) Internal Angle of Gyration Using Simulated Loading". This includes all design, quality control, and quality assurance SGCs. The compactors shall tilt the specimen molds at an average internal angle of 20.2 ± 0.35 mrad (1.16± 0.02 degrees).

(b) QUALITY CONTROL.

The Contractor shall provide and maintain a quality control system that will provide reasonable assurance that all materials, products, and completed construction submitted for acceptance conform to contract requirements whether manufactured or processed by the Contractor or procured from subcontractors or vendors. Quality control managers, laboratory technicians and roadway technicians will be certified by the Department as outlined in ALDOT-374, "Certification Requirements for Hot Mix Asphalt Technicians". This quality control system shall conform to ALDOT-375, "Contractor Quality Control System for Hot Mix Asphalt".

The sampling and testing frequencies shall conform to the requirements given in Table 1 for a pay item when the accumulated amount of asphalt mix placed for that pay item exceeds 250 tons {250 metric tons}. The accumulated amount of asphalt mix shall be the current total amount of asphalt mix that has been placed beginning from the start of construction. The sampling and testing frequencies given in Table 1 may be waived by the Division Materials Engineer and the asphalt mix may be accepted by visual observation for a maximum accumulated asphalt mix placement quantity of 250 tons {250 metric tons} or less for any individual pay item. The Engineer will record the results of the acceptance of the asphalt mix on form BMT-16 if sampling and testing is not required.

TABLE I **SECTION 327 E and 420 MIXES**

SAMPLING AND TESTING REQUIREMENTS FOR QC/QA PROJECTS

Control Parameter	Sample Size	Sampling Methods	Sampling Location	Testing Methods	ALDOT Testing Frequency	Contractor Testing Frequency
1. Asphalt Content *	ALDOT Sample = 55 lb {25 kg} Split into 2 equal samples	AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-354 or AASHTO T 308 +++	1 per day per LOT	++ 1 per 700 tons
2. Mixture Gradation * *	Contractor Sample = 55 lb {25 kg} Split into 2 equal samples	AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-371 AASHTO T 308	1 per day per LOT	++ 1 per 700 tons
3. Asphalt Draindown	12 lb {5 kg}	AASHTO T 168 & ALDOT-210	+Loaded Truck	AASHTO T 305	As Required	As Required

* See ALDOT-353 Determining H.M.A. Laboratory Quality Control / Assurance Parameters.

* * If the test results are out of specification tolerance on two consecutive tests for the same size sieve, production shall cease until proper plant adjustments are made.

+ Beginning each production day, no sample for acceptance purposes shall be taken prior to the production of 50 tons. If the random number selected falls within the first 50 tons, the sample shall be taken from the first loaded truck following the truck containing the fiftieth ton produced.

++ One sample for each 500 tons {500 metric tons} for Section 420 mixes.

Note: The testing increment shall have a 150 ton buffer between each increment.

+++ Under AASHTO T 308, mixture calibration shall be used. The ignition furnace shall be equipped with an internal weighing system with microprocessor control where sample weight {mass} and percent weight {mass} loss is computed and produced on hard-copy output.

TABLE I (*CONT'D.*) SECTION 423 MIXES (*STONE MATRIX ASPHALT*)

SAMPLING AND TESTING REQUIREMENTS FOR QC/QA PROJECTS

Control Parameter	Sample Size	Sampling Methods	Sampling Location	Testing Methods	ALDOT Testing Frequency	Contractor Testing Frequency
1. Asphalt Content *	ALDOT Sample = 90 lb {40 kg} Split into 2 equal samples Contractor Sample = 90 lb {40 kg} Split into 2 equal samples	AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-354 or AASHTO T 308 ++++	1 per day per LOT	++ 1 per 700 tons
2. Maximum Specific Gravity *		AASHTO T 168 & ALDOT-210	+Loaded Truck	AASHTO T 209 (Flask determination with dry back)	1 per day per LOT	++ 1 per 700 tons
3. Air Void Content & VMA *		AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-353 & ALDOT-307	1 per day per LOT	++ 1 per 700 tons
4. Mixture Gradation * *		AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-371 AASHTO T 308	1 per day per LOT	++ 1 per 700 tons
5. Retained Tensile Strength Note: The TSR test is not required for any pay item less than a full lot.	25 lb {12 kg}	AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-361	1 set of 6 for the first full lot (2,800 tons {2,800 metric tons}) and 1 set of 6 for the next 10,000 tons {10,000 metric tons} and 1 set of 6 for each additional 20,000 tons {20,000 metric tons} or portion thereafter	1 set of 6 for the first full lot (2,800 tons {2,800 metric tons}) and 1 set of 6 for the next 10,000 tons {10,000 metric tons} and 1 set of 6 for each additional 20,000 tons {20,000 metric tons} or portion thereafter
6. Mat Density *		ALDOT-210	Roadway	ALDOT-222 & ALDOT-350		As per Contractor's QC plan (ALDOT-375)
				ALDOT-403 AASHTO T 166 Method A AASHTO T 275 AASHTO T 331	°° 1/3000 lane feet/lift {1/900 lane m/lift	
7. Clay Content	Adequate Quantity	AASHTO T 2	Aggregate Stockpiles	AASHTO T 176	As required	As required
8. Asphalt Draindown	12 lb {5 kg}	AASHTO T 168 & ALDOT-210	+Loaded Truck	AASHTO T 305	As Required	As Required

* See ALDOT-353 Determining H.M.A. Laboratory Quality Control / Assurance Parameters.

* * If the test results are out of specification tolerance on two consecutive tests for the same size sieve, production shall cease until proper plant adjustments are made.

°° Cores shall be taken by the Contractor and the density will be determined by the Department.

\+ Beginning each production day, no sample for acceptance purposes shall be taken prior to the production of 50 tons. If the random number selected falls within the first 50 tons, the sample shall be taken from the first loaded truck following the truck containing the fiftieth ton produced.

++ The sample shall be one set of three Marshall samples or one set of two gyratory samples +++.

Note: The testing increment shall have a 150 ton buffer between each increment.

+++ When slag is used as an aggregate in the mixture, four Marshall samples or three gyratory samples shall be compacted. The test result the furthest away from the average of the four test results shall be discarded and the remaining three test results shall be averaged for use in the computation of air voids.

++++ Under AASHTO T 308, mixture calibration shall be used. The ignition furnace shall be equipped with an internal weighing system with microprocessor control where sample weight {mass} and percent weight {mass} loss is computed and produced on hard-copy output.

TABLE I (*CONT'D.*) SECTION 424 MIXES (*SUPERPAVE*)
SAMPLING AND TESTING REQUIREMENTS FOR QC/QA PROJECTS

Control Parameter	Sample Size	Sampling Methods	Sampling Location	Testing Methods	ALDOT Testing Frequency	Contractor Testing Frequency
1.Asphalt Content *	ALDOT Sample = 135 lb {60 kg} Split into 2 equal samples Contractor Sample = 135 lb {60 kg} Split into 2 equal samples	AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-354 or AASHTO T 308 ++++	1 per day per LOT	++ 1 per 700 tons
2. Maximum Specific Gravity *		AASHTO T 168 & ALDOT-210	+Loaded Truck	AASHTO T 209 (Flask determination with dry back)	1 per day per LOT	++ 1 per 700 tons
3. Air Void Content & VMA		AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-384 ALDOT-388 ALDOT-353	1 per day per LOT	++ 1 per 700 tons
% G_{mm} @ N_d *					As needed	
4. Mixture * * * Gradation & Dust to Asphalt Ratio *		AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-371 AASHTO T 308	1 per day per LOT	++ 1 per 700 tons
5. Retained Tensile Strength Note: The TSR test is not required for any pay item less than a full lot.	25 lb. {12 kg}	AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT-361	1 set of 6 for the first full lot (2,800 tons {2,800 metric tons}) and 1 set of 6 for the next 10,000 tons {10,000 metric tons} and 1 set of 6 for each additional 20,000 tons {20,000 metric tons} or portion thereafter	1 set of 6 for the first full lot (2,800 tons {2,800 metric tons}) and 1 set of 6 randomly for the next 10,000 tons {10,000 metric tons} and 1 set of 6 for each additional 20,000 tons {20,000 metric tons} or portion thereafter
6. Mat Density *		ALDOT-210	Roadway	ALDOT-222 & ALDOT-350		As per the Contractor's QC plan (ALDOT-375)
				ALDOT-403 AASHTO T 166 Method A AASHTO T 275 AASHTO T 331	°° 1/3,000 lane feet/lift {1/900 lane m/lift}	
7. Fine Aggregate Angularity * * FAA Note: The FAA test is not required for any pay item less than a full lot.	Adequate quantity to run AASHTO T 304, Method A or ASTM C 1252,Method A	AASHTO T 2	+Loaded Truck	AASHTO T 304, Method A Or ASTM C 1252, Method A	1 for the first full lot (2,800 tons {2,800 metric tons}) and 1 for the next 10,000 tons {10,000 metric tons} and 1 for each additional 20,000 tons {20,000 metric tons} or portion thereafter	1 for the first full lot (2,800 tons {2,800 metric tons}) and 1 randomly for the next 10,000 tons {10,000 metric tons} and 1 randomly for each additional 20,000 tons {20,000 metric tons} or portion thereafter
8. Clay Content	Adequate quantity	AASHTO T 2	Stockpile	AASHTO T 176	As required	As required
9. Asphalt Draindown	12 lb {5kg}	AASHTO T 168 & ALDOT-210	+Loaded Truck	AASHTO T 305	As Required	As Required
10. Split Tensile ***	35 lb. {17 kg}	AASHTO T 168 & ALDOT-210	+Loaded Truck	ALDOT 361 (Report the Unconditioned Sample for Split Tensile)	N/A	1 for the first full lot and 1 randomly for each additional 10,000 tons thereafter

TABLE I (*CONT'D.*) SECTION 424 MIXES (*SUPERPAVE*)
SAMPLING AND TESTING REQUIREMENTS FOR QC/QA PROJECTS

* See ALDOT-353 Determining H.M.A. Laboratory Quality Control / Assurance Parameters.
* * In virgin mixes, the sample may be taken from the cold feed conveyor.
*** If the test results are out of specification tolerance on two consecutive tests for the same size sieve, production shall cease until proper plant adjustments are made.
°° Cores shall be taken by the Contractor and the density will be determined by the Department.
\+ Beginning each production day, no sample for acceptance purposes shall be taken prior to the production of 50 tons. If the random number selected falls within the first 50 tons, the sample shall be taken from the first loaded truck following the truck containing the fiftieth ton produced.
++ The sample shall be one set of two gyratory samples+++.
Note: The testing increment shall have a 150 ton buffer between each increment.
+++ When slag is used as an aggregate in the mixture, three gyratory samples shall be compacted. The test result the furthest away from the average of the three test results shall be discarded and the remaining two test results shall be averaged for use in the computation of air voids.
++++ Under AASHTO T 308, mixture calibration shall be used. The ignition furnace shall be equipped with an internal weighing system with microprocessor control where sample weight {mass} and percent weight {mass} loss is computed and produced on hard-copy output.

(c) QUALITY ASSURANCE.

1. ACCEPTANCE PROCEDURES.

All materials will be evaluated for acceptance and payment through the Department's Acceptance Procedures specified herein. The Department will be responsible for determining the acceptability and pay factor of the construction and materials incorporated therein.

The Department will utilize the Contractor's QC System test results for liquid asphalt binder content and laboratory compacted air void content for pay purposes except where:

a. The Department's Quality Assurance testing, as described in Item 3 below and Subarticle 410.08, does not validate the quality of the material.

b. QC sampling and testing was not performed in accordance with specified procedures.

The Department will determine the sample locations.

The sampling and testing frequencies shall conform to the requirements given in Table 1 for a pay item when the accumulated amount of asphalt mix placed for that pay item exceeds 250 tons {250 metric tons}. The accumulated amount of asphalt mix shall be the current total amount of asphalt mix that has been placed beginning from the start of construction. The sampling and testing frequencies given in Table 1 may be waived by the Division Materials Engineer and the asphalt mix may be accepted by visual observation for a maximum accumulated asphalt mix placement quantity of 250 tons {250 metric tons} or less for any individual pay item. The Engineer will record the results of the acceptance of the asphalt mix on form BMT-16 if sampling and testing is not required.

All conforming and nonconforming inspections and test results will be monitored in accordance with ALDOT-353 and ALDOT-370 and shall be recorded on approved forms and charts which shall be kept up to date and complete and shall be available at all times to the Department during the performance of the work. Only those tests designated by the Department in advance as acceptance tests will be utilized in the computation of pay factors. Test properties shall be charted on forms that are in accordance with the applicable requirements of the Department. A copy of each chart and form to be used by the Contractor will be furnished by the Department. The Contractor shall furnish his own supply of the charts and forms. The Contractor or Producer may design their own forms and charts; however, these must be approved by the Engineer prior to their use.

A LOT is normally defined as 2,800 tons {metric tons} for Section 327, 423 and 424 mixes, and 2,000 tons {metric tons} for Section 420 mixes, consisting of four QC test sets of laboratory tests (liquid asphalt binder content and laboratory air voids or gradation), unless specifically stated otherwise in this item or elsewhere in the specifications. A LOT will usually consist of at least four density tests; however, a LOT may have fewer than four density tests. The Engineer will round a testing increment or a LOT to the nearest truckload of material.

A LOT lasting longer than thirty calendar days or a LOT with inactivity for longer than 30 calendar days will be terminated. Mix produced after the completion of the last full LOT, a terminated LOT, and small production projects will be evaluated and pay factors computed and may be accepted on the basis of less than four laboratory tests (liquid asphalt binder content and laboratory air voids or gradation).

Each LOT will be accepted on the basis of the actual number of test sets run for that LOT. If the production process is considered out of control (any individual test result for asphalt content, gradation (single sieve), or air voids has a pay factor equal to 0.80 computed from the "1 Test" column in Table II, Table III, or Table VI, of Subarticle 410.08 whichever is appropriate), production shall be suspended and corrections made as outlined in Subarticle 410.08. Gradation pay factors are normally computed on each screen tested and then averaged, however, if any individual screen has a pay factor of 0.80 (before being averaged with the other screen(s)), the process is considered out of control.

The Contractor may voluntarily terminate a LOT when the pay factor will be less than 0.90 when calculated using the one test row of table II, III, and VI in Section 410. If the Contractor terminates a LOT, production shall be suspended and corrections made as outlined in Subarticle 410.08. The voluntary termination of a LOT may only be done once per pay item, per project.

All sampling, testing and computations for a LOT will be completed and pay factors provided the Contractor as soon as possible.

All sampling and testing of materials, including frequency of samples and tests for the Contractor's Quality Control and the Department's verification, shall be performed in strict conformance with the Department's Testing Manual as modified in Table I. This Manual (available on the ALDOT Internet Site) contains guidance for sampling and testing procedures from AASHTO, ASTM, and ALDOT procedures.

2. ACCEPTANCE OR REJECTION.

The decision of the Engineer will be final as to the acceptance, rejection, or acceptance at an adjusted payment of each LOT. Rejected LOTS shall be removed at no cost to the Department and replaced at the contract unit bid price.

3. SAMPLING OF LOTS AND SUBLOTS.

It is the intent of these specifications that each LOT (for mixture testing) and each SUBLOT (for mat density testing) will meet specification requirements at the time of initial evaluation. No resampling or retesting (other than referee testing described below) will be allowed. The Department will, however, perform at least one liquid asphalt binder content, one maximum specific gravity, one mixture gradation, and one set of laboratory compacted samples for air void content tests per day per Lot, as specified in Table I, to verify the Contractor's test results. If the Contractor is not required to perform a test that day (the tonnage calculated by the random number is not reached), the Department will not run a verification test. The Department will perform a verification test for each LOT, even where there is more than one LOT per day.

The Contractor will be notified by the Engineer as to the point in production at which to procure mixture acceptance samples. The Contractor shall sample the mixture and split it into two samples: the Contractor's primary sample and a referee sample. The portions of mixture for the referee sample shall be bagged, labeled, and stored for testing, if required. All referee samples will be kept by the Department until they are tested (if required).

The Contractor shall obtain a verification testing sample from each LOT each day for testing by the Department. The verification testing samples shall be taken at locations directed by the Engineer. These locations will be different from the Contractor's mixture acceptance sample locations. The Contractor may take half of each sample for verification testing. The Department will compare the verification sample to the closest (in tonnage) Contractor's primary sample. The sampling of Hot Mix Asphalt is outlined in ALDOT-380, Forms and Examples for Sampling and Computing Pay Factors for Hot Mix Asphalt.

4. TESTING AND LOT VERIFICATION.

Air voids shall be computed on the Contractor's sample by using the running average of the Contractor's last four maximum specific gravities. If slag is used as an aggregate in the mixture, the running average of the Contractor's four most recent determinations for the bulk specific gravity of the compacted mixture shall be used in the computation of the air voids for the Contractor's sample. The calculation of the running averages of both maximum specific gravity and bulk specific gravity shall start with the first LOT. The test strip is independent of the LOTs. Air voids shall be computed on the Department's sample by using the Department's individual maximum specific gravity and bulk specific gravity. The Department and the Contractor shall compare test results with each other for the above mentioned testing increments. If there are no differences or if the differences are within the

tolerances listed in Tables V or VI, Section 410, for each parameter, no further testing and analysis will be necessary and the Contractor's test values will be used in the computation of the appropriate LOT pay factor.

If the Contractor's air voids do not compare with the Department's test results, the Contractor shall re-compute test results using the individual maximum specific gravity for that particular testing increment and re-compare with the verification test result. If the results compare within the tolerances in Table V, Section 410, using the individual maximum specific gravities, no further testing will be required and the Contractor's running average of the last four maximum specific gravities will be used to compute air voids for pay factor determination.

Also, if the Contractor's air voids do not compare with the Department's test results, and the Contractor is using slag as an aggregate, the Contractor shall re-compute test results using the individual bulk specific gravity for that particular testing increment and re-compare with the verification test result. If the results compare within the tolerances in Table V, Section 410, using the individual bulk specific gravity, no further testing will be required and the Contractor's running average of the last four bulk specific gravities will be used to compute air voids for pay factor determination.

If the results of the Department's verification test and the Contractor's test do not compare within the tolerances in Tables V or VI, Section 410, but yield the same pay factor for the LOT when the Department's result is substituted for the Contractor's result, no further testing will be required. Where the Contractor's test results and the Department's test results do not compare and cannot be resolved by the above mentioned methods but the pay factor dispute is between 1.00 and 1.02 the Contractor may elect to accept the 1.00 pay factor and waive referee testing.

When differences between test results of the verification samples are not within the tolerances listed in Tables V or VI, Section 410, and cannot be resolved by the above mentioned methods, referee testing will be required.

All referee samples will be tested by the Bureau of Materials and Tests, Central Laboratory, 3704 Fairground Road, Montgomery, AL 36110. The Bureau of Materials and Tests Central Laboratory is an AASHTO accredited laboratory (see AASHTO R 18, Recommended Practice for Establishing and Implementing a Quality System for Construction Materials Testing Laboratories).

5. REFEREE TESTING

Laboratory:

All testing increments of the referee samples for the entire LOT shall be tested in the Bureau of Materials and Tests Hot Mix Laboratory for the pay factor parameter(s) (liquid asphalt binder content, laboratory compacted air voids, or gradation) in question. The Contractor's results (using the individual air voids and maximum specific gravities) will be compared to the Bureau of Materials and Tests results (using Materials and Tests individual bulk and maximum specific gravities) for each testing increment in the LOT. When the Contractor's results and the Bureau of Materials and Tests results are within the tolerances listed in Tables V or VI, Section 410, the Contractor's results will be used. When the Contractor's results are not within the tolerances listed in Tables V or VI, Section 410, the Bureau of Materials and Tests Central Laboratory results will be used for final pay factors. The Bureau of Materials and Tests Central Laboratory will record the Contractor's field results and the Central Laboratory's results of the parameter(s) in question on form BMT-135.

For each testing increment these results, either the Contractor's or the Bureau of Materials and Tests', will be used in the computation of the appropriate LOT pay factor.

Should differences between test results, that are not within the tolerances listed in Table V or VI, Section 410, for liquid asphalt binder content, air voids, or gradation continue for two consecutive days, operations shall be halted until testing discrepancies can be resolved. The Bureau of Materials and Tests will monitor testing procedures by Department and Contractor technicians until consistent test results are achieved.

Cores:

If the Contractor believes that the core density values determined by the State are in error, the Contractor shall notify the Division Materials Engineer in writing that referee testing is requested. Using the original cores, the Division will again determine the densities of the cores in question using a technician different from the technician who originally determined the core density. If these new densities result in a different pay factor, the new pay factor shall be applied to the tonnage in question (this may increase or decrease the Contractor's pay adjustment).

6. ADJUSTED PAYMENT FOR DEFICIENCIES.

The payment for each LOT will be adjusted on the basis of acceptance test results in accordance with the requirements given in this Section. Accurate records shall be kept of the quantity (tonnage) of plant mix in each LOT.

Pay factors shall be determined for each LOT from the values given in Tables II, III, IV, and VI, Section 410, in accordance with the following:

Pay Factor For:	Mix 327	Mix 420	Mix 423	Mix 424
Air Voids	N/A	N/A	Table II	Table III
Asphalt Content	Table II	Table II	Table II	Table III
Mat Density	N/A	N/A	Table IV	Table IV
Gradation	N/A	Table VI	N/A	N/A

The lowest numerical pay factor in a Lot will be applied to the contract price for the total tonnage {metric tonnage} in the LOT. This will result in an adjustment to the compensation for the Lot that will be shown in a separate line item on the payment estimates.

Pay factors above 1.00 will not be applied to mixes that are tested on fewer than three characteristics or when there are less than four laboratory tests (percent liquid asphalt binder and laboratory air voids or gradation) per characteristic; it is not necessary to obtain four roadway densities to obtain a pay factor above 1.00. When the pay factor is calculated to be greater than 1.00, a pay factor of 1.00 will be applied.

Pay factors above 1.00 will not be applied to mixes where the roadway density requirement has been lowered below 94%.

(d) ADJUSTMENT PERIOD.

During start-up operations, an adjustment period (test strip) as described below shall be required when producing a new job mix formula. The purpose of the adjustment period will be to permit the Contractor to adjust his production process and for Contractor QC personnel and ALDOT QA personnel to calibrate and coordinate their testing procedures. The Contractor has the option of running a test strip or waiving the test strip, if the proposed job mix formula has been produced satisfactorily on previous projects. The waiver of a test strip shall be in writing to the Project Manager prior to any production and placement of the previously produced job mix design. The Contractor assumes the risk of milling and relaying unacceptable mix with no additional compensation if the test strip is not utilized.

A test strip of not more than 500 tons {500 metric tons} shall be constructed. If the placement of a test strip is not completed the same day it is begun, the Contractor shall construct a new test strip. Production shall stop until the Contractor has completed one liquid asphalt binder content, one air void content, and four mat density tests for mixes other than 327 and 420. For 327 and 420 mixes the Contractor shall complete one liquid asphalt binder content and one gradation. The pay factors for liquid asphalt binder content, air void content, and gradation will be calculated using the one test row of Table II, Table III and Table VI, and the pay factor for mat density will be calculated using the four test row of Table IV in Section 410. The production point at which the mix shall be sampled shall be determined by the Contractor. This sample does not have to be randomly selected, but should be representative of the mix produced. Contractor mat density tests shall be performed with non destructive density testing devices, meeting the requirements of Section 306, which have been calibrated for the layer being placed according to ALDOT-222, ALDOT-350, or Section 306. The Contractor shall cut cores at these locations and immediately turn the cores over to the Department for density measurements and determination of the pay factor. The Department will conduct the same tests for verification at the same time the Contractor is conducting his tests. If a pay factor of less than 1.00 is obtained using the one test row of Table II, Table III and Table VI, and using the four test row of

Table IV in Section 410, a second test strip consisting of 200 tons {200 metric tons} shall be constructed. If a pay factor of less than 1.00 is obtained using the one test row of Table II, Table III and Table VI, and using the four test row of Table IV in Section 410 in the second test strip, additional 200 ton {200 metric ton} test strips shall be constructed until pay factors are equal to 1.00, at which time production can begin. A test strip is determined to be complete when the results of the tests are known.

The Engineer may require any test strip to be removed and replaced at no cost to the Department if the pay factor determined from the four test row for mat density and the one test row for other tests is 0.80. For actual payment purposes, a pay factor of 1.00 will be used for all first and second test strips allowed to remain in place. Pay factors will be applied to the third and all subsequent 200 ton test strips at the average of the computed rate (using the one test row) and 1.00.

SECTION 410
ASPHALT PAVEMENTS

410.01 Description.

The work under this Section covers the general requirements that are applicable to all types of hot and warm mix asphalt pavements of the plant mix type. Deviations from these general requirements will be indicated in the specific requirements for various types of mixes noted in the following sections of these Specifications.

This work shall consist of one or more courses of hot and warm mix asphalt plant mix constructed in accordance with these specifications and the specific requirements of the type of mixture required and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established by the Engineer. The Contractor may use either hot mix or warm mix for all Superpave ESAL Range mixes in Section 424. Warm mix asphalt shall be defined as the use of an approved warm mix technology in the plant mix at the time of production.

This work shall also include the preparation of the underlying surface on which the plant mix is to be placed, including patching and/or leveling as shown on the plans or directed.

In addition, this work shall also include the placing of widening at locations shown on the plans and/or directed by the Engineer. In general, widening shall consist of (1) narrow width build-ups, three feet or less {one meter or less}, required for widening existing pavement, (2) paving for turn-outs beyond three feet {one meter} from the edge of pavement, (3) pavement crossovers, and (4) turning lanes of less than 200 feet {60 m} for crossovers. Paving used on turn-outs for intersecting paved roads and shoulder paving will not be considered as widening unless shown on the plans.

Surface layers and wearing layers are defined as those layers where the pay item contains the wording “Wearing Surface”.

All ALDOT procedures referenced are applicable to both hot and warm mix asphalt.

410.02 Materials.

(a) APPLICABLE SECTIONS OF SPECIFICATIONS.

Materials shall conform to requirements given in Sections 327, 420, 423 and 424.

(b) PRODUCTS AND PROCESSES FOR THE PRODUCTION OF WARM MIX ASPHALT.

Warm Mix Asphalt products and processes shall be selected from List II-27, “Warm Mix Asphalt Products and Processes” of the Department's manual titled "Materials, Sources, and Devices with Special Acceptance Requirements". Information concerning this list is given in Subarticle 106.01(f) and ALDOT-355.

(c) ANTI-STRIPPING AGENTS.

All warm mix asphalt mixtures shall include an anti-stripping agent. The warm mix additive supplier may certify that an anti-stripping agent is an integral part of the warm mix additive.

All hot mix asphalt mixtures except 327 and 420 shall be tested during design to determine if an anti-stripping agent is needed. During design and production, all other mixes shall have a tensile strength ratio (TSR) of at least 0.80 when tested in accordance with AASHTO T 283 as modified by ALDOT-361. If any TSR value falls below the minimum specified above, plant operations shall cease

until corrective measures are taken. However, if any visual stripping occurs in the design or field production, an anti-stripping agent shall be required if deemed necessary by the Engineer. Should it become necessary for the Contractor to include an anti-strip agent in the mix due to the occurrence of visual stripping during field production of the mix after the design tests indicated that the same mix met the above listed TSR requirement, such work will be paid for as Extra Work as defined by Article 104.03. Additional payment for the anti-strip agent will not be made in cases where the same mix has been previously used in field production and visual stripping occurred.

The amount of anti-stripping agent, when required, shall be 0.25 to 1.0 % by weight {mass} of the liquid asphalt binder content for liquid agents and 0.5 to 2.0 % by weight {mass} of the total aggregate for powdered agents. Liquid anti-stripping agent shall be added to the liquid asphalt binder by approved on-line blending equipment either at the refinery or the Contractor's mixing plant within ±10% of the specified rate.

Silicone may be used in liquid asphalt binder, not to exceed 2 ounces per 5000 gallons {3 ml per 1000 L}. Except when producing Warm Mix Asphalt, other additives shall not be added to the liquid asphalt binder unless expressly authorized in writing by the Materials and Tests Engineer.

The use of any unauthorized additive will be cause for rejection of the mixture.

(d) COMPOSITION OF MIXTURES.

1. ADJUSTMENTS TO RATE OF PLACEMENT.

The project designated rate per square yard {square meter} of the plant mix layers are designed assuming a compacted mix unit weight {mass} of not greater than 158 pounds per cubic foot {2530 kg/m^3} for dense graded mixes (light weight aggregates excepted.) Hence, a correction to the plan designated rate per square yard {square meter} will be made in accordance with the following:

- If the compacted mix density as determined in the job mix formula design exceeds 158 , or is below 130, pounds per cubic foot, {2530 kg/m^3, or is below 2080 kg/m^3}, the correction will be based on the formula:

x = ab/158 {x = ab/2530}, where

x = corrected rate per square yard {square meter},

a = laboratory compacted mix unit weight in pounds per cubic foot {density in kilograms per cubic meter} as shown in the job-mix formula, and

b = project designated rate per square yard {square meter} of plant mix as shown on the job plans.

- If the laboratory compacted density is between 130 pounds per cubic foot and 158 pounds per cubic foot {2080 kg/m^3 and 2530 kg/m^3}, no correction will be made to the pounds per square yard {kilograms per square meter} designated by the plans or proposal.

- If the plans provide for the use of lightweight aggregate (expanded clay or shale), the pounds per square yard {kilograms per square meter} of the layer shown by the plans or proposal will not be adjusted.

- If the plans provide for the use of an "Open Graded" plant mix layer, the pounds per square yard {kilograms per square meter} of the layer shown by the plans or proposal will not be adjusted.

2. REQUIREMENT FOR APPROVED JOB MIX FORMULA.

Work shall not be started under this Section on a specific project until the Contractor has submitted and received approval of a job-mix formula from the Materials and Tests Engineer and the job mix formula has been checked by the Division Materials Engineer for use on the project.

A change in aggregate sources will require a new job-mix formula before the new material is used. A change in liquid asphalt binder source and anti-stripping agent will be allowed without a new job-mix formula provided the design criteria is met by a one-point check of the mixture. The one-point check shall include the Air Void, VMA, Stability, Flow, and TSR (Tensile Strength Ratio) and may be determined during the production of the mix. However, no change in the grade of liquid asphalt binder will be allowed without the approval of the Materials and Tests Engineer.

3. CONTRACTOR'S RESPONSIBILITY FOR JOB-MIX FORMULA.

Designs for all mixes shall be the responsibility of the Contractor and shall be submitted by the Contractor for approval. Refer to applicable Sections (420, 424, etc.) for design criteria. The submitted formula shall have been designed by a certified technician (Level III - Designer) in a laboratory that has been certified by the Department.

4. APPROVAL OF JOB MIX FORMULA BY MATERIALS AND TESTS ENGINEER.

The Contractor shall submit to the Materials and Tests Engineer, for approval, a Job Mix Formula (JMF) for each mixture to be supplied from a specific plant. The Contractor shall allow at least four weeks for the evaluation and approval of the job mix formula.

The submitted formula shall include any additive by type and trade name and be accompanied by samples from the material sources he proposes to use in producing the mix. The job-mix formula for each mixture shall establish a single percentage of aggregate passing each required sieve size, a single percentage of liquid asphalt binder to be added to the aggregate, a single percentage of any additive, and a mixing temperature range suitable for the type, grade, etc. of liquid asphalt binder to be used in the mix. Each job-mix formula shall be accompanied by a test report from an approved laboratory certifying that all current Departmental design test parameters have been met (copies of the Departmental current design test parameters may be obtained from the office of the Materials and Tests Engineer). There will be no charge for the Department's checking of the Contractor's job-mix formula.

The approved job-mix formula for each mixture shall be in effect for a maximum of four years from the approval date on the JMF or until the Materials and Tests Engineer withdraws approval by written order.

5. APPROVAL OF JOB MIX FORMULA BY DIVISION MATERIALS ENGINEER.

At least two full working days prior to beginning the production of asphalt mix for a specific project, the Contractor shall submit a mix design (approved by the Materials and Tests Engineer) to the Division Materials Engineer. The project number shall be inserted on the approved job mix formula. The Division Materials Engineer will review the mix design to determine if the job mix formula is appropriate for the specific project. If the job mix formula is appropriate for the project, the Division Materials Engineer will sign the mix design as being approved, will note the date of approval, and will distribute copies for inspection of the asphalt production.

A copy of this approved job mix formula with the Materials and Tests Engineer's approval and the Division Materials Engineer's approval (with the date of approval) shall be available at the plant any time material is being delivered to the State.

6. ESTABLISHMENT OF DELIVERY TEMPERATURE.

The Engineer will check and record the temperature of the mixture upon delivery to the project site. The minimum delivery temperature for warm mix asphalt shall be 220 °F {104 °C}. The minimum delivery temperature for hot mix asphalt shall be 250 °F {121 °C}. The Engineer should monitor the work to ensure that there is not high variability in the delivery temperatures or isolated loads of temperature differentials that appear extreme. For pay items that do not require density as a pay factor (patching, widening, etc.) and / or for mixes that do not require density as a pay factor (OGFC, PATB, etc) the Contractor shall provide a + / - 25 ^{o}F {11 ^{o}C} delivery temperature range.

No loads will be accepted at a temperature greater than 350 °F {177 °C} for hot mix or warm mix asphalt.

7. CONFORMANCE TO APPROVED JOB MIX FORMULA.

All mixtures furnished for use on the project shall conform to the approved job-mix formulas within the following ranges of tolerances:

All liquid asphalt binders used shall meet the requirements given in Section 804. See appropriate pay factor table for liquid asphalt binder content requirements.

The mixing temperature shall not exceed 350 °F {177 °C}.

Tolerances for 327, 420 and 424 mixes:

- Plus or minus 7 % for the #4 {4.75 mm} and larger sieve requirements.
- Plus or minus 4 % for the #8 through #100 {2.36 mm through 150 μm} sieve requirements.
- Plus or minus 2.0 % for the #200 {75 μm} sieve requirement.

See Section 423 for gradation requirements for 423 mixes.

The initial setting of the controls for all materials shall be those amounts shown on the job-mix formula. The above tolerances are provided for slight variations inherent in job control applications. The Contractor shall make changes as necessary in order that the mixture will run as close as practical to the job-mix formula.

8. CONSISTENCY OF MIX DESIGN IN PLACEMENT OF WEARING LAYER.

More than one job mix formula may be submitted and approved for a layer of pavement. The placement of the entire wearing layer shall be from the same job mix unless otherwise approved in writing by the Engineer. For layers other than the wearing layer, the Contractor shall notify the Engineer in writing of the mix design change prior to changing production.

(e) RECYCLED ASPHALT PLANT MIX (RAP) AND RECLAIMED ASPHALT SHINGLES (RAS).

1. COMPLIANCE WITH ALDOT-372.

On all projects utilizing recycled/reclaimed material in the mixture, the Contractor's paving operation and RAP and RAS processing shall conform to the requirements given in ALDOT-372. The recycled hot and warm mix asphalt shall be a homogeneous mixture of reclaimed material, new aggregate (fine or coarse aggregate, or a mixture of fine and coarse aggregate) and new liquid asphalt binder material.

2. ALLOWABLE USAGE OF RAP AND RAS.

The Contractor shall have the option to use RAP and RAS in accordance with the requirements given in the following table unless shown otherwise on the plans:

ALLOWABLE USE OF RAP AND RAS Maximum Allowable Percent of RAP and RAS by mass of Total Aggregate Content		
Type of Mix	Maximum RAP Content #	Maximum RAP and RAS Content **
327, Plant Mix Bituminous Base	25 %	RAS Not Allowed
327-E, Permeable Asphalt Treated Base	10 %	RAS Not Allowed
420, Open Graded Friction Course	10 % RAP shall not contain chert*	RAS Not Allowed
423, Stone Matrix Asphalt 424, Superpave	Surface Layers: 20 % with no more than 15 % containing chert *; All Other Layers: 35 %	Surface Layers: 20 % *; All Other Layers: 35 %
* This limitation applies even if the surface layer is to be covered by an Open Graded Friction Course (Section 420). If the aggregate is chert gravel with a bulk specific gravity that is less than 2.550, a maximum of 15 % of the RAP will be allowed. RAP containing chert gravel shall be crushed so that 100 % of the RAP passes the 1/2 inch {12.5 mm} sieve. Additional RAP that does not contain chert gravel may be added to the mixture through a separate feeder. ** RAS shall be limited to 5 % by mass of the total aggregate content.		

3. PROCESSING AND RESTRICTIONS FOR AGGREGATE IN RAP.

RAP used in 3/8 inch {9.5 mm} Section 424 "Superpave" maximum size mix shall be processed so that 100 % of the RAP passes the 1/2 inch {12.5 mm} sieve. For all other mixes, the maximum size of the aggregate in the RAP shall meet the maximum size for the mix specified. The aggregate in the RAP shall meet the aggregate requirements of the mix it is used in and the requirements given in Sections 801 and 802 (no gravel in Section 327 PATB, Section 420 and Section 423 mixes). RAP used in Section 327 PATB and Section 420 mixes shall be processed so that 100 % of the RAP is retained on the No. 4 {4.75 mm} sieve.

4. RECLAIMED ASPHALT SHINGLES (RAS).

Reclaimed Asphalt Shingles (RAS) shall be handled, stored, and used in accordance with the requirements given for RAP and the following requirements.

The RAS shall be materials produced as a by-product of the manufacturing process for roofing shingles and/or scrap shingle (from roofing materials).

The RAS shall be free from foreign materials such as paper, nails, wood, and metal flashing. The RAS shall be shredded or ground prior to being incorporated into the mixture. The shredded RAS shall have 100% passing the 1/2 inch {12.5 mm} sieve in any dimension and a minimum of 95% passing the 3/8 inch sieve.

In addition to the requirements set forth in ALDOT-372, RAP stockpiles utilized for JMF's with RAP content greater than 25 % shall also meet the following requirements.

ADDITIONAL RAP STOCKPILE REQUIREMENTS FOR RAP USED IN A JOB MIX FORMULA WITH INCREASED RAP CONTENT	
Control Parameter	Standard Deviation*
Asphalt Content	0.5 %
% Passing #200 Sieve	1.5 %
Sieve with 50 % RAP Passing	5.0 %
*Based on a minimum of 10 tests	

Testing for RAP stockpile shall be included as part of the design JMF submittal.

(f) LIQUID ASPHALT BINDER DRAINDOWN.

1. FIBER STABILIZER.

A fiber stabilizer is required for some mix types (Section 420, 423, etc). A fiber stabilizer may be used on other mix types where asphalt binder cement draindown is a problem. Where RAS is included in the JMF, fiber stabilizer shall not be required provided the draindown requirements of 0.30% or less are met when tested in accordance with AASHTO T305 at 325°F {163°C} and 350°F {176°C}.

When fiber is used, the dosage rate shall produce a maximum liquid asphalt binder cement draindown of 0.30 % or less when tested in accordance with AASHTO T305 at 325°F {163°C} and 350°F {176°C}. When fiber is used, the sampling and testing frequency for all mixes for both Contractor and Department testing during production shall be one test for each 5000 tons {metric tons} or portion thereof. The fiber shall be listed on List II-23, Fibers for use in Hot Mix Asphalt (from the Materials, Sources, and Devices with Special Acceptance Requirements (MSDSAR) manual). If pelletized fibers are used, the fiber within the pellet shall be listed on List II-23. All fibers listed on List II-23 shall meet the requirements of either Item 2, 3, or 4 of this Subarticle.

2. CELLULOSE FIBERS.

The maximum length of the fiber shall be 0.25 inches {6.35 mm}. A representative 3 gram sample, when heated in a crucible between 1100 and 1200 °F {595 and 650 °C} for at least 2 hours, shall show between 13 % and 23 % non-volatiles. A representative 5 gram sample, when stirred into 100 ml of distilled water, shall have a pH between 6.5 and 8.5 after sitting for 30 minutes. A representative 5 gram sample, when saturated with mineral spirits for 5 minutes and then sieved for 10 minutes on a No. 40 {425 μm} sieve, shall absorb between 4 % and 6 % its own weight of mineral spirits. A representative 10 gram sample, when weighed and placed into a 250 °F {121 °C} oven for two hours, shall lose less than 5 % by weight when weighed immediately upon removal from the oven.

Sieve analysis of the cellulose fiber shall be either of the following methods:

- Using an Alpine Air Jet Sieve (Type LS), a representative 5 gram sample of the fiber is sieved for 14 minutes at a controlled vacuum of 11 psi {75.8 kPa}. The fibers remaining on the screen are weighed. The results of this analysis shall indicate that 60 % to 80 % of the fiber passes the No. 100 {150 μm} sieve. Or:

- Using a Mesh Screen Analysis, a representative 10 gram sample of the fiber is sieved using a shaker with two nylon brushes on each screen. The results of this analysis shall indicate that the fiber has the following amounts passing the specified screens: 75 % to 95 % on the No. 20 {850 μm} sieve, 55 % to 75 % on the No. 40 {425 μm} sieve, and 20 % to 40 % on the No. 140 {100 μm} sieve.

3. MINERAL FIBERS.

When tested according to the Bauer-McNett fractionation, the fiber length shall have a maximum mean test value of 0.25 inches {6.35 mm}. By using a phase contrast microscope, and a representative test sample of at least 200 fibers, the fiber diameter shall have a maximum mean test value of 0.0002 inches {5.1 μm}. The shot content passing the No. 60 {285 μm} sieve shall be 85% to 95%. The shot content passing the No. 230 {65 μm} sieve shall be 60 % to 80 %. This is a measure of non-fibrous material determined on vibrating sieves (for further information see ASTM C 612).

4. SYNTHETIC FIBERS.

Synthetic fibers shall include but are not limited to one or a combination of the following: polyolefins (such as polyethylene and polypropylene) and aramids (such as Kevlar, Twaron and Nomex). Fibers shall be twisted fibrillated, flat fibrillated or monofilament with a maximum fiber length of 0.75 inches {19 mm}

5. PLACING FIBER IN MIX.

a. Manual Method.

Provided it can be demonstrated to the satisfaction of the Engineer that the proper dosage of the fibers is uniformly distributed into the mix, manual introduction of fibers is acceptable when a batch plant is used to make the mix. When the fibers are available in prepackaged (weighed) containers, proper dosage may be pre-determined per batch. A device is required to interrupt mixture production and warn the plant operator if the operator manually feeding the fiber fails to introduce it properly. Dry mixing time shall be increased at least five seconds to insure adequate blending. Wet mixing time shall be increased at least five seconds for cellulose fibers and up to five seconds for mineral fibers. Manual introduction of fibers shall not be used in drum plants.

b. Automatic Method.

Methodology and equipment for metering bulk loose and pelletized fiber into asphalt plants has been developed by the fiber suppliers. Whenever the fiber supplier's recommendations are more stringent than this specification, the fiber supplier's recommendations are controlling. This specification requires specialized equipment that can accurately proportion and meter, by weight {mass}, the proper amount per batch (for batch plants) or continuously, in a steady uniform manner (for drum plants). Fiber, pelletized or loose, shall not be fed through the cold feed bins or through the rap bin.

These proportioning devices shall be interlocked with the plant system and controlled to +/-10% of the weight of the fibers required so as to maintain the correct proportions for all production rates and batch sizes. During the test strip, an equipment calibration check shall be performed to the satisfaction of the Engineer which shows the fiber is being accurately metered and uniformly distributed into the mix. These metering devices shall provide in process high flow (+ 10% or more) and low flow (-10% or less) plant operator notification and interrupt the mix production where the fiber rate is not properly controlled. The fiber metering system shall also provide a record of feed rate (weight or mass per time) and include a section of translucent pipe for visual confirmation of consistent flow rates. Care shall be taken to insure that the fibers are not entrained in the plant's exhaust system. If there is any evidence of fiber in the bag-house or wet-washer fines, the liquid asphalt binder line and/or the fiber line shall be relocated so that the fiber is captured by liquid asphalt binder spray and incorporated into the mix. If there is any evidence of clumps of fibers or pellets at the discharge chute, the contractor shall increase the mixing time and/or intensity. This may entail extending the liquid asphalt binder and fiber feeding lines further into the drum.

(g) SAMPLING AND INSPECTION.

Aggregates will be accepted in stockpiles in accordance with the Department's Testing Manual provided there is no segregation or contamination, but production of required gradation in the mix shall be the Contractor's responsibility.

Liquid asphalt binder will be accepted on the basis of ALDOT-243.

The right is reserved to take samples, including aggregates from stockpiles, plant mix from the hot elevator, plant mix from the spreader, liquid asphalt binder from storage tanks at the plant, etc., and to make further tests as needed as a basis for continued acceptance of the materials.

Samples of the mixture in use will be taken and tested in accordance with Subarticle 106.09(b).

When directed, the Contractor shall cut samples with mechanical equipment from the compacted pavement for testing. Samples not smaller than 4 inches {100 mm} square or 4 inches {100 mm} in diameter for the full depth of the course to be tested shall be taken at the locations directed by the Engineer. Furnishing of suitable approved cutting equipment, the cutting of the samples, and the immediate repair of the sample holes with similar type of material shall be performed by the Contractor without extra compensation.

A laboratory shall be furnished for the control of each hot and warm mix asphalt plant in accordance with the provisions of Section 601.

410.03 Construction Requirements.

(a) EQUIPMENT.

In general, choice of equipment will be left to the Contractor and it shall be his responsibility to provide proper sized and amounts of equipment that will produce, deliver to the roadbed, spread, and compact the plant mixed material in sufficient quantities for the continuous movement of the spreaders under normal operating conditions.

The mixing plant, hauling, spreading, and compaction equipment shall meet the requirements listed below; however, other equipment that will produce equally satisfactory results, such as electronically or automatically controlled devices of proven performance, will be considered for use in lieu thereof.

The Contractor shall secure approval of all equipment prior to beginning work and any equipment found unsatisfactory shall be promptly replaced or supplemented.

1. REQUIREMENTS FOR ALL PLANTS.

Mixing plants shall comply with the requirements of AASHTO M 156 as modified by ALDOT-324, Mixing Plant Requirements for Hot-Mixed, Hot-Laid Asphalt Paving Mixtures. In addition to the above, if a recycled/reclaimed mix is used, the mixing plant shall be modified as necessary to accommodate the use of the reclaimed material and necessary additives. Mixing plants shall be inspected at least annually to insure compliance with the requirements of AASHTO M 156 and ALDOT-324. The Contractor/Vendor will be charged a fee as specified by ALDOT-355, General Information Concerning Materials, Sources, and Devices with Special Acceptance Requirements. If the plant is relocated or substantially modified in any way within a year of the last inspection, an additional inspection and related fee will be required.

The plant shall be equipped with a dust collector constructed to waste or store and later return uniformly to the aggregate mixture all or any part of the material collected.

2. SCALES.

A digital recorder shall be installed as part of the platform truck scales. The recorder shall produce a printed digital record on a ticket of the gross and tare weights {masses} of the delivery trucks along with a time and date print for each ticket. Provisions shall be made so that scales may not be manually manipulated during the printing process, and so interlocked as to allow printing only when the scale has come to rest. The scales and recorder shall be of sufficient capacity and size to accurately determine the weight {mass} of the heaviest loaded truck or tractor trailers that are used for the delivery of the hot and warm mix asphalt from that plant.

In lieu of plant and truck scales, the Contractor may provide either (1) an approved automatic printer system which will print the weights {masses} of the material delivered (evidenced by a weight {mass} ticket for each load), provided the system is used in conjunction with an approved automatic batching and control system, or (2) an electronic load cell weight {mass} determination system with associated computer hardware and automated printing system.

The Contractor may provide a "weigh {mass} batcher" system utilizing a weigh {mass} hopper equipped with load cells that determine the net amount of mix delivered from the weight {mass} hopper. An automated weigh {mass} printing system shall be provided to accurately print the weight {mass} of material delivered, the time, and the date for each ticket.

All scales which determine the weight {mass} of the mix for pay purposes shall meet the requirements of Subarticle 109.01(h).

3. HAULING AND REMIXING EQUIPMENT.

a. Load Limitations.

Reference is made to Article 105.12 concerning load limitations on hauling equipment.

Wherever a Material Remixing Device is used, the following restrictions shall apply:

- The device shall be empty while on a bridge.
- The device shall be moved across a bridge without any other vehicles or equipment being on the bridge.
- The device shall be moved on a bridge only within the limits of a lane and shall not be moved on the shoulder of a bridge.

- The device shall move at a speed no greater than 5 miles {8 km} per hour without acceleration or deceleration.

b. Trucks.

Each truck shall have a hole in the side of the body, approximately 5/16 of an inch {8 mm} in diameter and suitably placed, to allow for temperature measurement of the asphalt mix.

Trucks used for hauling hot and warm mix asphalt mixtures shall have tight, clean, smooth metal beds that have been thinly coated with a minimum amount of approved asphalt release agent (List II-6, Hot Mix Asphalt Release Coating for Truck Beds, in the MSDSAR manual) to prevent the mixture from adhering to the beds. The use of gasoline, kerosene, diesel or other volatile material is prohibited.

Each truck shall be equipped with a tarpaulin that shall be used as needed to protect the mixture from adverse conditions. The tarpaulin shall be made of water repellent material, be of sufficient weight and strength to resist tearing and be in good condition with no holes or tears. The tarpaulin shall be large enough to cover the load.

Mixture shall not leave the plant unless the load is covered when the following conditions exist:

- when the air temperature is below 60 °F {15 °C};
- when hauling time exceeds 30 minutes;
- or when threatening weather exists.

c. Material Remixing Device.

When Pay Item 410-H is included in the contract, a material remixing device shall be used for the placement of all asphalt layers except the following:

- 327-E, Permeable Asphalt Treated Base (PATB);
- a layer placed directly on top of PATB if the placement must be accomplished by operating the remixing device on the PATB.

If a pay item is not shown on the Plans, the Contractor may use a material remixing device without compensation.

A material remixing device shall not be placed on a Permeable Asphalt Treated Base.

The material remixing device shall be capable of remixing plant mix between the trucks and the finished mat. Plant mix shall be remixed in the device prior to being laid by the paver or spreader. The plant mix delivered by the material remixing device shall be a homogeneous, non-segregated mixture.

Equipment known to accomplish this remixing operation and currently approved by ALDOT are the ROADTEC Shuttlebuggy, Terex/Cedarapids CR 662 RM, BLAW-KNOX MC-330/TWIN PUG TUB, Weiler E1250, and the Weiler E2850.

A material remixing device will not be required for temporary work of short duration, bridge replacements having less than 1000 feet {300 m} of pavement at each end of a bridge, acceleration and deceleration lanes less than 1000 feet {300 m} in length, tapered sections, widening, patching, spot leveling, shoulders, crossovers, side street returns and other areas designated by the Engineer. A material remixing device will also not be required when placing a continuous leveling layer where the thickness of the layer is required to be transversely tapered (i.e. to correct cross slope) to a thickness less than twice the maximum aggregate size of the layer being placed.

4. HOT AND WARM MIX ASPHALT PAVERS OR SPREADERS.

Hot and warm mix asphalt pavers or spreaders shall be self-contained and of sufficient size, power, and stability to receive, distribute, and strike off the asphalt material at rates and widths consistent with the specified typical section requirements and details shown on the plans and noted in Item 410.03(f)2.

All asphalt pavers or spreaders used for mainline paving, including shoulders and interchange ramps, shall be equipped with a full width vibratory, or other compactive type, screed. The augers used to move the material across the width of the screed shall extend within 1.5 feet {450 mm} of the edge of the screed. It will be permissible to use a hydraulically extendable strikeoff for paving turnouts and short sections of pavement including variable width sections and crossovers.

When laying mixtures, the paver shall be capable of being operated at forward speeds consistent with satisfactory laying of the mixture, providing a finished surface of the required evenness and texture without tearing, gouging, or shoving of the mixture.

All hot and warm mix asphalt paving machines shall be operated with automatic grade and slope controls unless otherwise directed by the Engineer. The automatic grade controls shall be a contact ski, a mobile stringline, or non-contact sonic averaging sensors. The effective length of these controls shall be a minimum of 24 feet {7.3 m}. In the event of a malfunction of the automatic control system, the spreading operation shall be discontinued after one hour until the equipment is repaired.

If shown to be required on the plans, special attachments to the pavers and spreaders will be required to shape and finish the pavement.

5. COMPACTION EQUIPMENT.

Compaction equipment shall be capable of compacting the mixture to the required density throughout the depth of the layer while it is still in a workable condition without damage to the material. The Contractor shall be responsible for the selection of the types and number of rollers to be used.

(b) DAYLIGHT, WET WEATHER AND TEMPERATURE LIMITATIONS.

1. OPERATIONS IN DAYLIGHT.

Placement and compaction operations shall be performed during daylight hours unless noted otherwise on the plans or directed otherwise by the Engineer. (The requirements for lighting for nighttime work are given in Article 104.04(a)).

2. WET WEATHER.

The mixture shall be laid only upon an approved underlying course, which is dry, and only when weather conditions are suitable. The Engineer may, however, permit work of this character to continue when overtaken by sudden rains, up to the amount which may be in transit from the plant at the time, provided the surface just ahead of the placing is swept clear of water and the mixture is within the allowable temperature tolerances. The layer placed under such conditions shall be at the Contractor's risk and shall be removed and replaced by the Contractor without extra compensation should it prove unsatisfactory.

3. COLD WEATHER RESTRICTIONS.

Hot mix asphalt (HMA) layers of 200 pounds per square yard {110 kg/m^2} or less shall not be placed when the surface or air temperature is below 40 ºF {4 ºC}; air temperature shall be 40 ºF {4 ºC} before the spreading operation is started. Spreading operations shall be stopped when the air temperature is below 45 ºF {7 ºC} and falling. For HMA layers over 200 pounds per square yard {110 kg/m^2}, the above temperature may be lowered 5 °F {2 °C}. Unless otherwise stated in the plans and specifications, polymer modified HMA layers of 200 pounds per square yard {110 kg/m^2} or less shall not be placed when the surface or air temperature is below 60 ºF {15 ºC}; for layers over 200 pounds per square yard {110 kg/m^2}, the above temperature may be lowered 10 °F {5 °C}.

Warm mix asphalt (WMA) layers of 200 pounds per square yard {110 kg/m^2} or less shall not be placed when the surface or air temperature is below 32 ºF {0 ºC}; air temperature shall be 32 ºF {0 ºC} before the spreading operation is started. Spreading operations shall be stopped when the air temperature is below 35 ºF {2 ºC} and falling. For WMA layers over 200 pounds per square yard {110 kg/m^2}, the above temperature may be lowered 5 °F {2 °C}. Unless otherwise stated in the plans and specifications, polymer modified WMA layers of 200 pounds per square yard {110 kg/m^2} or less shall not be placed when the surface or air temperature is below 50 ºF {10 ºC}; for layers over 200 pounds per square yard {110 kg/m^2}, the above temperature may be lowered 10 °F {5 °C}.

With the exception of Section 420 "Polymer Modified Open Graded Friction Course" layers, the Contractor may place HMA and WMA layers at temperatures lower than the cold weather limits. The Contractor is warned that other factors such as wind speed and percent humidity may increase the heat loss from the HMA and WMA layers. All other requirements for the installation and quality of the HMA and WMA layers shall be applicable to the work even when the restrictions against placement of the HMA and WMA during cold weather are not followed. The layers placed under such conditions shall be at the Contractor's risk and shall be removed and replaced without extra compensation if they are unacceptable. There will be no direct payment for additional costs associated with the placement of HMA and WMA during cold weather.

(c) PREPARATION OF UNDERLYING SURFACE.

1. GENERAL.

The underlying surface must be approved before the placing of a plant mix application will be allowed. The underlying surface, whether an old surface or a new surface, shall be thoroughly cleaned of all foreign or loose material and maintained in such condition in advance of the surfacing work.

Failures in existing pavement or base shall be corrected, as noted in Item 410.03(c)2, in advance of the placement of an overlying layer.

A prime coat, when required, shall be placed in accordance with Section 401. A tack coat, when required, shall be placed in accordance with Section 405.

2. PATCHING.

When patching of an existing surface is provided by the plans, the Engineer will examine the pavement surface and designate the area to be patched. The designated areas shall be trimmed to neat vertical lines for the depth of the unstable material as directed. The loose faulty material shall be picked up and removed from the area. The newly exposed patch area shall be cleaned and treated with prime or tack material as directed before placement of patching material. The hot and/or warm mix asphalt patching material shall be placed and compacted by methods approved by the Engineer until the patch area is filled to the elevation of the surrounding surface. Compaction of the patching material shall be to the degree that further consolidation of the patching material is not anticipated and is acceptable to the Engineer.

3. LEVELING.

When leveling of an existing pavement or base is provided by the plans, the surface shall be brought to required grade and cross section with plant mix material. The surface to be treated shall be prepared as noted herein and approved before placing the new material. The plant mix material shall be spread in accordance with the provisions of Item 410.03(f)2.

Leveling shall include superelevating when so directed.

4. WIDENING.

When widening is provided by the plans, the widening shall be placed at the locations designated by the plans and/or as directed by the Engineer. The requirements for placing the widening shall be the same, as far as practical, as for the placing of the normal roadway. Compaction of the widening material shall be to the degree that further consolidation of the widening material is not anticipated and is acceptable to the Engineer.

(d) PREPARATION OF MIXTURES.

1. LIQUID ASPHALT BINDER.

The liquid asphalt binder material shall be heated in a manner that insures the even heating of the entire mass under efficient and positive control at all times. Any liquid asphalt binder material which, in the opinion of the Engineer, has been damaged shall be rejected.

2. AGGREGATE.

a. Aggregate Used for Batch Mixing and Continuous Mixing Operations.

All aggregates shall be dried so that the moisture content of the hot and warm mix asphalt at the point of sampling is less than 0.20 % by weight {mass} in accordance with ALDOT-130. The temperature of the aggregate at the dryer shall not exceed 600 ºF {315 ºC}.

When more than two ingredients enter into the composition of the mineral aggregate, they shall be combined as directed.

The aggregate, immediately after being heated, shall be screened into three or more sizes and conveyed into separate bins, ready for batching and mixing with liquid asphalt binder material. However, for mixes using aggregate of 1/2 inch {12.5 mm} maximum size, the number of bins may be reduced to two.

b. Aggregates for Dryer Drum Mixing Operations.

Maintenance of a uniform aggregate gradation is essential for a dryer drum operation; hence, caution and care shall be exercised in stockpiling of materials to avoid segregation.

3. MIXING.

a. Mixing Temperature.

The mixing temperature of HMA and WMA shall be in accordance with the refineries' recommendations, based upon the temperature-viscosity curve, and shall be adequate to produce a mixture in accordance with the specification requirements. The mixing temperature shall not exceed 350 °F {177 °C}.

The mixing temperature for HMA and WMA shall be continuously recorded and delivered to the Engineer on the next working day.

b. Batch Mixing.

The dried mineral aggregate, and measured mineral filler when used, prepared as prescribed above, shall be combined in uniform batches by determining the weight {mass} of and conveying into the mixer the proportionate amounts of each aggregate required to meet the job-mix formula. The largest size aggregate shall be introduced first, then smaller sizes progressively, with mineral filler last, or all mineral components may be added simultaneously. The mineral components shall be thoroughly mixed. The required quantity of liquid asphalt binder material for each batch shall be measured by weight {mass} using scales or a liquid asphalt binder material metering device attached to the liquid asphalt binder material bucket.

After the mineral components have been mixed, the liquid asphalt binder material shall be added and the mixing continued for a period of at least 45 seconds, or longer if necessary to produce a homogeneous mixture. However, if a check by ASTM D 2489 (Ross Method) shows that 95% plus coating is obtained, a shorter mixing time will suffice. The Engineer may then give written permission for a change. Each batch must be kept separate throughout the weight {mass} determining and mixing operations.

The mixture shall be uniform in composition, free from lumps or balls of material containing an excess quantity of asphalt, or from pockets deficient in asphalt.

c. Continuous Mixing.

Components shall be introduced and proportioned volumetrically by continuous methods utilizing equipment specified herein for continuous plants. Amounts of aggregate and liquid asphalt binder material entering the mixer, and the rate of travel through the mixer, shall be so coordinated that a uniform mixture of specified gradation and liquid asphalt binder content will be produced.

d. Dryer-Drum Mixing.

Components shall be proportioned by weight {mass} as noted herein in Item 410.03(a)1 for this method of mixing. Amounts of aggregate and liquid asphalt binder material entering the mixer, and the rate of travel through the mixer, shall be so coordinated that a uniform mixture of specified gradation and liquid asphalt binder content will be produced. An anti-stripping agent may be required to insure adequate coating of the aggregates, if so directed by the Engineer.

4. RECYCLED MIXTURES.

a. New Aggregate Temperature.

The temperature of the new aggregate shall be super-heated to the point where, when combined with the reclaimed material, the specified discharge is produced; however, in no case shall the temperature of the new aggregate exceed 600 °F {315 °C}.

b. Mixing.

The plant shall be designed and operated so that heat transfer will take place in the mixing unit without damage to, or vaporization of, the liquid asphalt binder material. For batch type plants, a minimum dry mixing cycle of 15 seconds shall be required for the new aggregate and reclaimed material before introduction of the new liquid asphalt binder material. All environmental regulations shall be met as required by Article 107.22.

(e) TRANSPORTING MIXTURE.

The mixture shall be transported in approved equipment in accordance with Item 410.03(a)3. The equipment shall be in sufficient numbers to deliver the material to the roadbed without delay in the quantity required. Loads shall not be delivered too late in the day to be spread, compacted, and finished during daylight hours, unless nighttime work is allowed as shown on the plans or directed by the Engineer. Loads shall not be delivered at a temperature greater than 350 °F {177 °C} , or less than 220 °F {105 °C} without written permission of the State Materials and Tests Engineer.

(f) PLACING THE MIXTURE.

1. RATE OF PLACEMENT.

The rate of plant mix to be placed will be specified by the plans; however, this rate may require correction to adjust for the compacted mix unit weight {density} as determined in the job-mix formula design as outlined in Subarticle 410.02(b). The Engineer may direct in writing that the designated weight {mass} be increased or decreased in certain areas. It shall be the Contractor's responsibility to place and spread the material uniformly to such thickness as will produce the specified average rate, separately for each layer of base, binder, and surface, and to maintain a continuing check on tonnage {mass} and yardage {area} throughout the day's operation to insure uniform specified rate.

The unit for checking the average rate shall be approximately 5000 square yards {5000 m^2} to the nearest even truck load. If the last check performed in any day or any section of roadway is between 2000 and 5000 square yards {2000 and 5000 m^2}, this section shall be classified as a unit; if less than 2000 square yards {2000 m^2}, this section shall be added to the previous unit and the revised unit rechecked. When the initial day's operation is less than 2000 square yards {2000 m^2}, this initial section will be carried over to subsequent days' operations to make a unit of approximately 5000 square yards {5000 m^2}.

In any unit checked, the average rate shall not vary from the specified rate by more than 10 pounds per square yard {5 kg/m^2} for layers of 225 pounds per square yard {120 kg/m^2} or less, and 15 pounds per square yard {8 kg/m^2} for layers greater than 225 pounds per square yard {120 kg/m^2}. On the first applied layer of resurfacing where there is no required milling or leveling, this tolerance is increased to 15 pounds per square yard {8 kg/m^2} for layers of 225 pounds per square yard {120kg/m^2} or less, and 25 pounds per square yard {13 kg/m^2} for layers greater than 225 pounds per square yard {120 kg/m^2}. This tolerance is for providing leeway in equipment adjustment only. A consistent and uncorrected variation from the specified rate, even within this tolerance, will not be allowed without the Engineer's written approval. This tolerance does not apply to patching, leveling, and widening.

If the average rate of any unit is found deficient by more than the above referenced tolerance, the Engineer will determine (1) whether the Contractor shall remove and replace the deficient unit without payment for the removal or the material removed, or (2) whether the Contractor may leave the deficient unit in place and cover it with a layer of the same mix of adjusted maximum size aggregate of not less than 80 pounds per square yard {45 kg/m^2} average. In case (2), the surface layer shall not be feather-edged at the end of the overlay layer, but a sufficient amount of the surface beyond the ends of the deficient unit shall be removed, to a neat line across the pavement, to allow placing the full 80 pounds per square yard {45 kg/m^2} and to make a joint that will meet the surface requirements. There will be no payment for any portion of the overlay needed to bring the total up to the designated average rate for that unit.

If the average rate of any unit is found to exceed the above referenced tolerance, the tonnage {metric tonnage} in the unit that is in excess of the specified rate will be paid for as specified in Subarticle 410.09(a).

Unless otherwise provided in the following sections of these specifications, or shown on the plans, the average rate placed and compacted in one layer shall not exceed 350 pounds per square yard {200 kg/m^2} for base or binder layers, and 225 pounds per square yard {120 kg/m^2} for surface layers. Where the amount to be placed exceeds these limits, it shall be placed and compacted in two or more approximately equal layers or as shown on the plans.

2. SPREADING.

a. General.

Spreading of the hot and warm mix asphalt mixture shall be performed by equipment meeting the requirements of Item 410.03(a)4, except as noted in this Item. Approved specialized equipment may be employed to spread the hot and warm mix asphalt material where standard full scale equipment is impractical due to size and irregularity of the area to be paved.

For hot and warm mix asphalt pavement wearing layers, spreading operations shall be so correlated with plant and hauling equipment that the spreading operation, once begun, shall proceed at a speed as uniform and continuous as practical. The continual forward movement of the spreader requires the use of hauling vehicles capable of supplying the spreader with hot and warm mix asphalt material while the spreader is in motion. Repetitive interruptions or stopping of the spreader

shall be cause for the Engineer to stop the work until the Contractor evaluates the cause of the stoppage and has provided a definite action plan for correction of the interruptions. Any interruption will require the thorough check of the area immediately under the spreader and any variances shall be corrected immediately or the material removed and replaced, as directed, without additional compensation.

Material placed in the spreader shall be immediately spread and screeded to such uniform depth that the average rate of the mixture required is secured. Alignment of the outside edges of the pavement shall be controlled by preset control lines, and shall be finished in conformity with these controls.

Any spreading operation, which cannot produce acceptable joints within the surface tolerances and density requirements, shall be cause for requiring the Contractor to modify his operations to include additional spreading equipment.

b. Spreading by Motor Grader.

For areas of a hot and warm mix asphalt plant mix surface inaccessible to the mechanical spreader, patching of pot holes and correcting failures in existing pavement, the plant mix may be dumped in low areas in the amounts directed, windrowed, spread, and compacted to bring the elevation and section to the desired level.

If shown on the plans, the Contractor shall use a motor grader or a motor grader equipped with a dragbox to perform the spreading for the leveling operation. The motor grader shall be equipped with smooth faced tires. The dragbox, when required, shall be of sufficient size and weight {mass} to effectively shape and level the plant mix and shall be approved by the Engineer prior to use.

c. Spreading by Hand.

For areas inaccessible to mechanical spreading equipment, and when patching potholes and minor pavement failures, hand spreading of the hot and warm mix asphalt mixture may be permitted. The mixture shall be distributed immediately into place by means of suitable tools and spread in a uniformly loose layer.

(g) COMPACTING.

As soon as the mixture has been spread and has set sufficiently to prevent undue cracking or shoving, rolling shall begin. A delay in the initial rolling will not be tolerated and the initial or breakdown rolling should in general be performed by rolling longitudinally, beginning at the sides and proceeding toward the center of the surface.

The Contractor as part of his QC plan shall establish a rolling pattern when initially constructing any leveling layers using the nondestructive testing devices approved in Section 306 of the Specifications. The device shall either be calibrated to roadway cores or gage counts and shall be used to determine the rolling pattern producing maximum density. Contractor QC personnel shall be on site throughout each day to perform periodic checks and verify that the rolling pattern continually produces the maximum density that is achievable.

When paving abuts a previously placed lane, the longitudinal joint shall be rolled in the first pass. On superelevated curves rolling shall begin at the low side and progress toward the high side.

If any displacement occurs during rolling, it shall be corrected at once. To prevent adhesion of surface mixture to the rollers, the wheels shall be kept adequately moistened with water and a non-foaming detergent, but an excess of water will not be permitted.

Adequate precaution shall be taken to prevent dropping of gasoline or oil on the pavement. In places inaccessible to a roller, compaction shall be obtained with hand or mechanical tampers that produce adequate pressure to obtain the required density.

When the roller is in contact with a bridge deck, vibratory mode shall be turned off and the roller shall operate in static mode only.

Throughout the process of compacting, tests for surface smoothness as required by Article 410.05 and density as required by Section 306 shall be made continuously.

(h) JOINTS.

1. GENERAL.

Placing of hot and warm mix asphalt paving layers shall be as continuous as possible. All joints shall be made in a careful manner in such a way as to provide a smooth, well–bonded, and sealed joint meeting the density and surface requirements of Articles 410.04 and 410.05. Failure to meet

requirements noted above shall be cause for ordering the removal and reconstruction of the joint without extra compensation.

The contact surface of concrete structures shall be treated with a thin coat of liquid asphalt binder material, tack material, or the liquid asphalt binder material used in the mix, prior to construction of the joint. When directed by the Engineer, the same treatment noted above shall be used on cold asphalt joints.

2. LONGITUDINAL.

Longitudinal joints in the wearing surface shall conform with the edges of proposed traffic lanes, insofar as practical. Any necessary longitudinal joints in underlying layers shall be offset so as to be at least 6 inches {150 mm} from the joint in the next overlying layer.

3. TRANSVERSE.

Transverse joints shall be carefully constructed. Rollers shall not pass over the unprotected edge of the freshly laid mixture unless laying operations are to be discontinued. To facilitate the expeditious removal of the plant mix joint when laying operations are resumed, the Contractor shall place a heavy wrapping paper on the underlying surface across the joint and place plant mix on top of the paper.

Upon resumption of the work, a neat vertical joint shall be formed into the previously laid material to expose the full depth of the layer. The fresh mixture shall be raked and tamped to provide a well-bonded and sealed joint meeting surface and density requirements.

410.04 Density Requirements.

Density requirements shall be as specified in Table IV, Subarticle 410.08(e).

410.05 Surface and Edge Requirements.

(a) SURFACE SMOOTHNESS REQUIREMENTS.

1. GENERAL.

Surface smoothness and roadway section will be checked by the use of string, Engineer's level, and straight edge.

The Contractor shall furnish string, straightedges, and the necessary personnel to handle them under the supervision of the Engineer.

Surface smoothness tests shall be made continuously during and immediately after rolling so that irregularities may be eliminated to the extent possible by rolling while the material is still workable; otherwise, deficiencies shall be corrected as provided in Article 410.06.

2. PERPENDICULAR TO CENTERLINE OF ROADWAY.

The finished surface of all base, binder, and wearing surface layers shall not vary more than 1/4 of an inch {6 mm} from a 10 foot {3.0 m} straightedge placed perpendicular (at a right angle) to the centerline of the roadway anywhere on the surface.

Unless shown otherwise in the contract, the slope shall not vary by more than 0.20 % from the required slope in any 10 foot {3.0 m} distance over which the slope is measured without the Engineer's written approval. (If, for example, a 2.0 % slope is required, the measured slope shall not be greater than 2.2 % or less than 1.8 %.)

3. PARALLEL TO CENTERLINE OF ROADWAY.

The surface shall not vary more than 1/4 of an inch {6 mm} from a 16 foot {4.8 m} straightedge placed parallel to the centerline anywhere on the surface. A 16 foot {4.8 m} rolling straightedge, equipped with marking capability, may be used in lieu of the fixed straightedge if approved by the Engineer.

The finished surface shall not vary more than 3/8 of an inch {9 mm} in any 25 foot {8 m} section from a taut string applied parallel to the surface at the following locations: 1 foot {300 mm} inside of the edges of pavement, at the centerline, and at other points designated by the Engineer. The variance from the designated grade shall not increase or decrease by more than 1/2 of an inch {12 mm} in 100 feet {30 m}.

(b) EDGE REQUIREMENTS.

Unless shown otherwise on the plans, surface, binder, and leveling pavement edges not confined by curbing or other structures may be lightly tamped, generally with a lute and immediately

behind the placement operation, to form an approximately 1:1 slope as a preventative measure against cracking and bulging during the rolling process. This procedure shall also be required on the initial edge of a longitudinal cold joint. These edges shall be neatly shaped to line behind the breakdown roller and shall be trimmed as necessary after final rolling, to an accurately lined string or wire providing a maximum tolerance of 2 inches {50 mm} outside the theoretical edge of pavement, with a maximum variation from a true line of 1/2 of an inch {12 mm} in 10 feet {3 m} and a slope not flatter than 1:1. Edges that are distorted by rolling shall be corrected promptly.

(c) RIDEABILITY REQUIREMENTS.

The rideability requirements covered in this Subarticle shall apply only when either Item 410-A, 410-B, or 410-C is included on the plans or in the proposal.

1. TESTING DEVICE.

a. Description.

The testing device shall be a longitudinal profilograph including all accessories and chart paper herein described. The chart paper containing the log of the smoothness index shall become the property of the Department at the time the measurements are taken. The following categories cover the furnishing and disposition of the profilograph:

Pay Item 410-A - The furnishing, by the Contractor, of a new profilograph, including chart paper, and its reconditioning, if deemed necessary by the Engineer, and title transfer to the Department upon completion of its use on the project.

Pay Item 410-B - The furnishing, by the Department, of a profilograph for use on the project. The Contractor shall furnish the chart paper.

Pay Item 410-C - The furnishing, by the Contractor, of a new or acceptable used profilograph, including chart paper, for use on the project with the Contractor retaining ownership of the profilograph.

b. Equipment Requirements.

The profilograph shall be a California type profilograph, completely equipped with all necessary accessories. The profilograph shall be hand-propelled and shall have multiple averaging wheels.

When the profilograph is required to be furnished by the Contractor, the Contractor shall calibrate the profilograph prior to delivery to the project and shall maintain the profilograph during the time its use is required on the project. When the profilograph is furnished by the State, the Department will calibrate and maintain the profilograph.

Chart paper for the profilograph shall be furnished in sufficient quantities for all calibration, test runs, and actual tests deemed necessary by the Engineer.

c. Equipment Delivery.

The profilograph shall be delivered to the project a minimum of two weeks before the beginning of the paving operation of the pavement layer to be tested to allow time for checking the profilograph.

2. TESTING PROCEDURE.

a. Description.

Unless shown otherwise by the plans, the following surfaces will be subject to the requirements of this Subarticle if one of the pay items listed in Subitem 410.05(c)1.a. is included in the proposal:

- Actual wearing surfaces including Polymer Modified Open Graded Friction Course (Section 420);

- The surface of the layer directly beneath the Polymer Modified Open Graded Friction Course.

The actual testing procedure shall be as outlined in ALDOT-335, a copy of which may be obtained from the Department's webpage. The Engineer reserves the right to make minor modifications to this procedure if he deems such will produce better results.

The profilograph test shall be performed as soon as practical after the pavement has been rolled and compacted sufficiently to prevent damage to the surface but no later than the next work day after placement of the pavement, unless otherwise authorized by the Engineer. The

Contractor shall furnish the necessary personnel to operate the profilograph under the direction of the Engineer.

The profilograph test is considered a part of the paving operation and will be performed immediately in the proper sequence, in a satisfactory manner, even to the exclusion of other work.

b. Rideability Requirements.

The results of the profilograph tests shall be evaluated by Department personnel as outlined in ALDOT-335.

If a Profile Index of 50.0 inches per mile {800.0 mm/km} is exceeded in any test section of any daily paving operation, the paving operation will be suspended as soon as possible after results of the unacceptable test section are obtained. The paving will not be allowed to resume until corrective action is taken by the Contractor.

When the Profile Index is more than 20.0 inches per mile {320.0 mm/km}, per section, a unit price reduction will be assessed. When the Profile Index is less than 10.0 inches per mile {160.0 mm/km} per section, a unit price increase will be added. The price adjustments are given in the following Table 1.

TABLE I

Profile Index Inches/Mile/Section {Millimeters/Kilometer/Section}	Contract Price Adjustment Percent of Pavement Unit Bid Price
Under 10.0 {Under 160.0}	105 – (Profile Index/2.0) {105 – (Profile Index/32.0)}
10.0 to less than 20.0 {160.0 to less than 320.0}	100
20.0 thru 50.0 {320.0 thru 800.0}	100 - (Profile Index – 20.0)/1.5 {100 - (Profile Index – 320.0)/24.0}
Over 50.0 {Over 800.0}	Unacceptable

Any price adjustment for rideability considerations will be applied to the theoretical tonnage {metric tonnage}, calculated using the plan specified rate of placement, placed in those sections testing under 10.0, or more than 20.0, inches/mile {160.0, or more than 320.0, mm/km} per section.

c. Stringline and Straightedge Requirements.

On test sections where the Profile Index is 20.0 inches per mile {320.0 mm/km}, or less, the longitudinal stringline and straightedge requirements of Item 410.05(a)3 may be waived by the Engineer except at transverse construction joints and tie-ins. Within 50 feet {15 m} of all transverse construction joints and tie-ins, and on all test sections where the Profile Index is greater than 20.0 inches per mile or greater {320.0 mm/km}, all requirements of Item 410.05(a)3 will apply.

410.06 Correction of Deficiencies and Defects.

Deficiencies in surface smoothness shall be remedied to the extent practicable by rolling while the material is still workable. Otherwise the layer shall be removed and replaced as necessary to obtain required smoothness. "Skin patching" of a surface layer to correct low areas or heating and scraping to correct high areas will not be permitted. Overlays of not less than 80 pounds per square yard {45 kg/m^2} may be authorized by the Engineer for surface smoothness deficiencies provided all material in the overlay is without additional cost to the Department.

Deficiencies in thickness shall be remedied as specified in Item 410.03(f)1.

All areas containing excessive or deficient amounts of liquid asphalt binder, all areas showing unacceptable segregation of materials, and all areas unbonded after rolling shall be removed and replaced at no cost to the Department. Unacceptable segregation of a hot and warm mix asphalt mat is defined as any area in which two six inch {150 mm} cores are taken and the average percent liquid asphalt binder content of the cores have an absolute difference greater than 0.50 percentage points of the design liquid asphalt binder content, or the combined gradation analysis of the two cores on selected sieves has an absolute difference greater than 10 percentage points from the job-mix formula. All testing shall be in accordance with ALDOT-389, "Evaluation of Segregated Areas in Hot Mix

Asphalt Pavement." The location of all cores taken for segregation evaluation will be determined by the Department. All coring and traffic control required by ALDOT-389 shall be conducted/supplied by the Contractor at no cost to the Department; however, the Contractor will be reimbursed $500.00 per core when core results are within tolerances and the coring operations require additional traffic control.

At any time that segregation is determined to be unacceptable, work shall be automatically suspended if positive corrective action is not taken by the Contractor to prevent further segregation in the mat. Upon suspension, the Contractor shall place a test section not to exceed 500 tons {500 metric tons} of the affected mixture for evaluation by the Engineer. However, if after a few loads it is apparent that the corrective actions were not adequate, work shall again be suspended and the segregated areas evaluated in accordance with ALDOT-389. Likewise, if after 500 tons {500 metric tons} it is apparent that the problem has been solved, work will be allowed to continue.

When correcting subsurface mixtures (base and binder layers), the removal and replacement may be limited to the actual defective areas or the full mat width within the limits of individual defective areas as directed by the Engineer. Removal and replacement of hot and warm mix asphalt wearing surface layers shall be a minimum of the full mat width and 10 feet {3 m} in length. All surface tolerance requirements shall apply to the corrected areas for both subsurface and surface mixes.

Areas found deficient in density shall be removed and replaced or immediately re-rolled until density is acceptable.

All work specified in this Article shall be performed without additional compensation.

410.07 Maintenance and Protection.

Sections of newly finished work shall be protected from all traffic until they become properly hardened. Maintenance shall include immediate repairs of any defects that may occur on the work; such repairs shall be repeated as often as necessary to maintain the work in a continuously satisfactory condition. The Contractor shall be responsible for the protection of the work and protection of any traffic using the work. No extra compensation will be paid for maintenance and protection.

410.08 Method of Measurement.

(a) GENERAL.

The accepted quantity of hot and warm mix asphalt plant mix used as directed will be measured in tons of 2000 pounds {metric tons} in accordance with the following:

When the laboratory compacted density as determined in the job-mix formula design exceeds 158 pounds per cubic foot {2530 kg/m^3}, the actual total tonnage {metric tonnage} of mix placed will be adjusted for pay purposes in accordance with the following formula (this shall not apply to Section 327 PATB and Section 420 OGFC):

$y = 158\ c / a$ { $y = 2530\ c / a$}, where

y = total tonnage {metric tonnage} of plant mix for pay purposes;

c = actual tonnage {metric tonnage} of plant mix measured and placed, except items subject to pay factor adjustment under the QC/QA provisions. On items subject to pay factor adjustment, the adjusted tonnage {metric tonnage} (after pay factor adjustment) will be used;

a = laboratory compacted mix unit weight in pounds per cubic foot {density in kilograms per cubic meter} as shown in the job-mix formula.

No adjustments to the actual total tonnage {metric tonnage} placed will be made where the laboratory compacted mix density is below 158 pounds per cubic foot {2530 kg/m^3}.

No adjustments to the actual tonnage {metric tonnage} placed will be made when the use of lightweight aggregate (expanded clay or shale) is designated.

For determining weight {mass}, each load of hot and warm mix asphalt mixture shall have its weight {mass} determined on approved certified scales, as specified in Article 109.01, furnished by the Contractor without direct compensation.

The weight {mass} measurement shall include all components of the mixture. No deductions will be made for any of the components, including the liquid asphalt binder material, contained in the mixture.

The laboratory compacted density requirements for OGFC are given in Section 420. Section 327 PATB does not have a laboratory compacted density requirement because a layer thickness (typically 4 inches {100 mm}) is required instead of a rate of placement.

(b) ACCEPTANCE OF THE MIXTURE.

The hot and warm mix asphalt mixture will be evaluated at the plant on a LOT to LOT basis. The material will be tested for acceptance in accordance with the provisions of Section 106 and the following requirements. However, any load or loads of mixture, which, in the opinion of the Engineer, are obviously unacceptable, will be rejected for use in the work.

The Contractor shall control all operations in the handling, preparation, and mixing of the hot and warm mix asphalt plant mix so that the percent liquid asphalt binder and voids in laboratory compacted samples or gradation will meet the approved job-mix formula within the tolerances shown in Tables II, III, and VI for the 1.00 pay factor. In recognition of the fact that the drying and screening operations may generate additional dust over that shown in the approved mix design, the Contractor's attention is drawn to the realization that the dust must be controlled in order to control VMA and voids in the total mix.

Acceptance of the mixture will be in accordance with Subarticle 106.09(c).

LOT pay factors for asphalt content and air voids will be determined from Table II for Section 423 mixes and from Table III for a Section 424 mix after the requirements of Item 106.09(c)3 are satisfied. LOT pay factors for asphalt content will be determined from the top half of Table II for Section 327 and 420 mixes after the requirements of Item 106.09(c)3 are satisfied. Air voids are not a pay factor for Section 327 and 420 mixes. Gradation is shown as a pay factor for Section 420 mixes in Table VI. The pay factor values determined for each sieve noted in Table VI will be averaged. This average will then be compared to the asphalt content pay factor. The lowest of these two pay factors will be applied to the mix.

Calculations for the acceptance test results for asphalt content and voids in total mix shall be carried to the thousandths (0.001) and rounded to the nearest hundredth (0.01). Calculations for averages shall be carried to the thousandths (0.001) and rounded to the nearest hundredth (0.01) in accordance with AASHTO R 11 rules of rounding. LOT pay factors will be calculated to the nearest hundredth (0.01).

Payment for Section 327 and 423 mixes will be on the basis of Table II Acceptance Schedule for Payment. Payment for a Section 424 mix will be on the basis of Table III Acceptance Schedule for Payment. Payment for Section 420 mixes will be on the basis of Table II and Table VI.

(c) SUSPENSION AND VOLUNTARY TERMINATION OF LOTS.

The production process will be considered out of control when any individual test result (asphalt content, gradation, or air voids) from a LOT has a pay factor equal to 0.80 computed from the "1 Test" row in Table II, Table III, or Table VI, whichever is appropriate. When gradation is a pay factor, a 0.80 result for an individual screen (before averaging) is considered out of control. If any single gradation for the 327 mixes falls outside of the gradation band shown in Section 327 the process is considered out of control. When this happens, production shall be suspended. If mix from the suspended LOT is contained in storage/surge bins, that mix will be considered part of the suspended LOT, and shall not be placed on any State project.

When production is suspended as described above, or when the contractor voluntarily terminates a lot, production shall not be re-started until after all of the following has been accomplished:

(1) the Contractor shall notify the Project Manager immediately that the process is out of control, or that the LOT has been terminated voluntarily, and that production has been suspended;

(2) the Contractor shall determine what adjustments to make in order to bring the process under control and inform the Project Manager in writing of these adjustments;

(3) after adjustments, the Contractor shall produce sufficient mix (approximately 25 to 35 tons {25 to 35 metric tons}) as a trial batch and test for control parameters (asphalt content, gradation, and air voids);

(4) adjustments, trial batches, and tests shall be repeated as many times as necessary until pay factors for asphalt content, gradation, and air voids equal 1.00, minimum, at which time production may be re-started. Mix utilized as a trial batch shall not be used on the project.

(d) ACCEPTANCE SCHEDULE OF PAYMENT FOR ASPHALT PLANT MIX CHARACTERISTICS.

TABLE II						
SECTION 327 MIXES** SECTION 420 MIXES (OPEN GRADED FRICTION COURSE)** SECTION 423 MIXES (STONE MATRIX ASPHALT)						
ACCEPTANCE SCHEDULE OF PAYMENT FOR ASPHALT PLANT MIX CHARACTERISTICS						
Arithmetic Average of the Absolute Values of Deviations of the LOT Acceptance Tests From Job Mix Formula Values						
Asphalt Content						
LOT Pay Factor ->	1.02	1.00	0.98	0.95	0.90	0.80*
1 Test	-	0.00-0.48	0.49-0.51	0.52-0.57	0.58-0.66	Over 0.66
2 Tests	-	0.00-0.34	0.35-0.36	0.37-0.40	0.41-0.47	Over 0.47
3 Tests	-	0.00-0.28	0.29-0.29	0.30-0.33	0.34-0.38	Over 0.38
4 Tests	0.00-0.14	0.15-0.24	0.25-0.26	0.27-0.28	0.29-0.33	Over 0.33
Voids in Total Mix (Lab. Compacted Samples)						
LOT Pay Factor ->	1.02	1.00	0.98	0.95	0.90	0.80*
1 Test	-	0.00-1.50	1.51-1.62	1.63-1.80	1.81-2.10	Over 2.10
2 Tests	-	0.00-1.06	1.07-1.15	1.16-1.27	1.28-1.48	Over 1.48
3 Tests	-	0.00-0.87	0.88-0.94	0.95-1.04	1.05-1.21	Over 1.21
4 Tests	0.00-0.45	0.46-0.75	0.76-0.81	0.82-0.90	0.91-1.05	Over 1.05
* If approved by the Department, the Contractor may accept the indicated LOT partial pay. The Department may require removal and replacement. If the LOT pay factor is greater than 0.80, the Contractor has the option to remove at no cost to the Department and to replace at contract unit bid price rather than accepting the reduced LOT payment. ** The Acceptance Schedule of Payment for "Voids in Total Mix" will not apply to the 327 and 420 mixes						

TABLE III						
SECTION 424 MIXES (SUPERPAVE)						
ACCEPTANCE SCHEDULE OF PAYMENT FOR ASPHALT PLANT MIX CHARACTERISTICS						
Arithmetic Average of the Absolute Values of Deviations of the LOT Acceptance Tests From Job Mix Formula Values						
Asphalt Content						
LOT Pay Factor ->	1.02	1.00	0.98	0.95	0.90	0.80*
1 Test	-	0.00-0.62	0.63-0.68	0.69-0.75	0.76-0.88	Over 0.88
2 Tests	-	0.00-0.44	0.45-0.48	0.49-0.53	0.54-0.62	Over 0.62
3 Tests	-	0.00-0.36	0.37-0.39	0.40-0.43	0.44-0.51	Over 0.51
4 Tests	0.00-0.19	0.20-0.31	0.32-0.34	0.35-0.38	0.39-0.44	Over 0.44
Voids in Total Mix (Lab. Compacted Samples)						
LOT Pay Factor ->	1.02	1.00	0.98	0.95	0.90	0.80*
1 Test	-	0.00-2.50	2.51-2.70	2.71-3.00	3.01-3.50	Over 3.50
2 Tests	-	0.00-1.77	1.78-1.91	1.92-2.12	2.13-2.47	Over 2.47
3 Tests	-	0.00-1.44	1.45-1.56	1.57-1.73	1.74-2.02	Over 2.02
4 Tests	0.00-0.75	0.76-1.25	1.26-1.35	1.36-1.50	1.51-1.75	Over 1.75
* If approved by the Department, the Contractor may accept the indicated LOT partial pay. The Department may require removal and replacement. If the LOT pay factor is greater than 0.80, the Contractor has the option to remove at no cost to the Department and to replace at contract unit bid price rather than accepting the reduced LOT payment.						

TABLE VI				
SECTION 420 MIXES (OPEN GRADED FRICTION COURSE)				
ACCEPTANCE SCHEDULE OF PAYMENT FOR ASPHALT PLANT MIX CHARACTERISTICS				
Arithmetic Average of the Absolute Values of Deviations of the LOT Acceptance Tests From Job Mix Formula Values				
Gradation 3/8" {9.5 mm} Sieve				
LOT Pay Factor	1 Test	2 Tests	3 Tests	4 Tests
1.02	-	-	-	0.00 – 3.60
1.00	0.00 – 12.00	0.00 – 8.48	0.00 – 6.93	3.61 – 6.00
0.98	12.01 – 12.96	8.49 – 9.16	6.94 – 7.48	6.01 – 6.48
0.95	12.97 – 14.40	9.17 – 10.18	7.49 – 8.31	6.49 – 7.20
0.90	14.41 – 16.80	10.19 – 11.88	8.32 – 9.70	7.21 – 8.40
0.80*	Over 16.80	Over 11.88	Over 9.70	Over 8.40
Gradation No. 8 {2.36 mm} Sieve				
LOT Pay Factor	1 Test	2 Tests	3 Tests	4 Tests
1.02	-	-	-	0.00 – 2.40
1.00	0.00 – 8.00	0.00 – 5.66	0.00 – 4.62	2.41 – 4.00
0.98	8.01 – 8.64	5.67 – 6.11	4.63 – 4.99	4.01 – 4.32
0.95	8.65 – 9.60	6.12 – 6.79	5.00 – 5.54	4.33 – 4.80
0.90	9.61 – 11.20	6.80 – 7.92	5.55 – 6.47	4.81 – 5.60
0.80*	Over 11.20	Over 7.92	Over 6.47	Over 5.60
The comparison value for ALDOT and Contractor testing for the 3/8" {9.5 mm} and No. 8 {2.36 mm} sieves is +/- 2.0%. * If approved by the Department, the Contractor may accept the indicated LOT partial pay. The Department may require removal and replacement. If the LOT pay factor is greater than 0.80, the Contractor has the option to remove at no cost to the Department and to replace at contract unit bid price rather than accepting the reduced LOT payment.				

(e) ACCEPTANCE OF THE ROADWAY DENSITY.

For paving that is not mainline paving (paving for patching, widening, and crossovers and leveling), in-place density pay factors will not be applied. For mainline paving (including shoulders, ramps, and acceleration/deceleration lanes), in-place density pay factors will be applied as specified herein unless otherwise noted on the plans or in the specifications.

After the hot and/or warm mix asphalt mixture has been placed and compacted, it shall be evaluated for density. A core for mat density determination shall be taken by the Contractor on each 3000 foot {900 m} segment of roadway lane of asphalt mixture placed. The location of each test will be designated by the Department. The core shall meet a minimum thickness for use in determining the roadway density. If the core's average thickness in inches {millimeters} is not at least 0.008 times the rate in pounds per square yard {0.375 times the rate in kilograms per square meter}, another core shall be taken (as close a practical to the original location) where the Engineer believes the pavement is thick enough for roadway density determination. The core's average thickness shall be determined by measuring the core's thickness at six equidistant locations around the circumference of the core. The Department will take immediate possession of the core and will make a density determination of the core in accordance with AASHTO T 166, Method A. The density values of the cores will be used to compute the pay factor for that sublot. Testing locations will be selected with the random number method outlined in ALDOT-210. Contractors are allowed, but not required, to take cores anywhere, anytime for quality control. This includes taking cores from the wearing layer. The contractor must have the permission of the Engineer to take cores from a PATB (327) or OGFC (420) mix. All core holes shall be promptly repaired at the contractor's expense. For purposes of evaluation, a LOT will be as defined in Item 106.09(c)1. A SUBLOT for evaluation of density will be equal to 12,000 feet {3600 m} (4 test results) or fraction of a 12,000 foot {3600 m} length as applicable. For instance, a 27,000 foot

{8100 m} LOT would be divided into two 12,000 foot {3600 m} SUBLOTS and one 3000 foot {900 m} SUBLOT.

The in-place density will be expressed as a percentage of the theoretical maximum mix density with the following relationship:

$$\% \text{ TMD} = \frac{\text{In-place Density}}{\text{Maximum Mix Density}} \times 100$$

Maximum mix density is equated to maximum mix specific gravity as measured with AASHTO T 209, Flask determination with dry back. The maximum mix specific gravity used will be the average of the values from the four most recent determinations using Contractor data.

The appropriate pay factor for each SUBLOT will be determined from Table IV for the appropriate number of test results. The pay factor for the LOT will be determined by computing the weighted average of the SUBLOTS:

$$\text{LOT Pay Factor (PF)} = \frac{\text{PF SUBLOT 1 (Length SUBLOT 1)} + \text{PF SUBLOT 2 (Length SUBLOT 2)} + \ldots}{\text{Length SUBLOT 1} + \text{Length SUBLOT 2} + \ldots}$$

Calculations for the acceptance test results for in-place density will be carried to the hundredths (0.01) and rounded to the nearest tenth (0.1). LOT and SUBLOT pay factor calculations will be carried to the thousandths (0.001) and rounded to the nearest hundredth (0.01) in accordance with AASHTO R 11 rules of rounding.

The low rates of placement at which minimum density does not apply are given in Section 306. Density pay factors will not be applied to pavement layers placed at these rates.

TABLE IV
ACCEPTANCE SCHEDULE OF PAYMENT FOR IN-PLACE DENSITY

SECTION 423 MIXES (STONE MATRIX ASPHALT)					
Characteristic	SUBLOT PAY FACTOR	Arithmetic Average of the Absolute Values of Deviations of SUBLOT Acceptance Tests From Target**			
		1 Test	2 Tests	3 Tests	4 Tests
In-Place Density	1.02	0.00 - 2.00	0.00 - 1.41	0.00 - 1.15	0.00 - 1.00
	1.00	2.01 - 3.33	1.42 - 2.36	1.16 - 1.92	1.01 - 1.67
	0.98	3.34 - 3.60	2.37 - 2.55	1.93 - 2.08	1.68 - 1.80
	0.95	3.61 - 4.00	2.56 - 2.83	2.09 - 2.31	1.81 - 2.00
	0.90	4.01 - 4.67	2.84 - 3.30	2.32 - 2.69	2.01 - 2.33
	0.80*	Over 4.67	Over 3.30	Over 2.69	Over 2.33
SECTION 424 MIXES (SUPERPAVE)					
Characteristic	SUBLOT PAY FACTOR	Arithmetic Average of the Absolute Values of Deviations of SUBLOT Acceptance Tests From Target**			
		1 Test	2 Tests	3 Tests	4 Tests
In-Place Density	1.02	0.0-2.25	0.0-1.59	0.0-1.30	0.0-1.12
	1.00	2.26-3.75	1.60-2.65	1.31-2.17	1.13-1.88
	0.98	3.76-4.05	2.66-2.86	2.18-2.34	1.89-2.02
	0.95	4.06-4.50	2.87-3.18	2.35-2.60	2.03-2.25
	0.90	4.51-5.25	3.19-3.71	2.61-3.03	2.26-2.62
	0.80*	Over 5.25	over 3.71	over 3.03	Over 2.62

* If approved by the Department, the Contractor may accept the indicated partial SUBLOT pay. The Department may require removal and replacement. The Contractor has the option to remove at no cost to the Department and replace at contract unit bid price rather than accepting the reduced SUBLOT payment.

** Target density shall be 94.0 % of the theoretical maximum density for all mixes except for:
- the range of placement rates given in Item 306.03(g)3 (140 pounds per square yard or greater {76 kg per square meter or greater} and less than 200 pounds per square yard {109 kg per square meter} over surface treatments) the target density shall be 92.0 % and;
- ESAL Range A and B mixes where the Contractor demonstrates and explains in writing why 94 % of the theoretical maximum density cannot be achieved and the Engineer informs the Contractor by written notification that the target density can be reduced to 93 % or 92 %.

TABLE V
COMPARISON OF ALDOT AND CONTRACTOR TESTING

TEST	ACCEPTABLE
ASPHALT CONTENT	± 0.30 %
AIR VOIDS	± 0.50 %
GRADATION *	See Table VI
* Gradations given in Articles 327.02 and 420.02.	

(f) TACK COAT.

Tack coat liquid asphalt material used as directed will be measured and paid for as specified in Section 405.

(g) WASTED AND EXCESS MATERIALS APPLIED.

Deductions in measurement will be made for all material wasted or lost due to negligence of the Contractor or applied beyond the limits of the work.

(h) PROFILOGRAPH.

The number of profilographs measured for payment will be the actual number of units ordered and accepted.

(i) MATERIAL REMIXING DEVICE.

The number of material remixing devices measured for payment will be the number of units approved by the Engineer for use. These devices will be measured per each device.

410.09 Basis of Payment.

(a) UNIT PRICE COVERAGE.

Compensation for plant mix material, measured as provided above, will be made on a tonnage {metric tonnage} basis and the contract unit price per ton {metric ton} for each individual item shall be full compensation for construction of the hot and warm mix asphalt plant mix layer complete in place on the roadbed as indicated or directed, including all materials, procurement, handling, hauling, and processing cost, and includes all equipment, tools, labor, and incidentals required to complete the work.

Unless otherwise covered by a separate pay item, the cost of excavation for patching and widening, compacting the subgrade, backfilling, spreading, or disposing of excess excavated material, removal and disposal of old pavement, removal and resetting of roadway signs and mailboxes, and removal and disposal of pavement markers shall be subsidiary obligations of the associated plant mix pay item, and no additional payment will be made for performing the work.

No payment will be made for unacceptable material; for material needed to overlay layers deficient in thickness; for material used in replacing defective or condemned construction; for material wasted in handling, hauling, or otherwise; or for maintaining the work.

When the average rate of placement is found to exceed the tolerance given in Item 410.03(f)1., the tonnage {metric tonnage} placed above the specified rate in that unit will be paid for at 50 percent of the contract unit price. This reduction will not be applied to patching, leveling, and widening.

The ordered and accepted profilographs, measured as noted above, will be paid for at the contract unit price bid which shall be full compensation for furnishing the unit and includes all equipment, tools, labor, calibration, maintenance, services, supplies, chart paper, and incidentals necessary to complete these items of work.

The number of approved remixing devices, measured as noted above, will be paid for at the contract unit bid price. This price shall be full compensation for furnishing the vehicles and shall include all equipment, tools, labor, calibration, maintenance, services, operator, and all other items necessary to furnish and operate the vehicles.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

See Appropriate Section for Type of Plant Mix Involved.
410-A Profilograph - per Each
410-B State Furnished Profilograph - per Each
410-C Contractor Retained Profilograph - per Each
410-H Material Remixing Device - per Each

SECTION 420
POLYMER MODIFIED OPEN GRADED FRICTION COURSE

420.01 Description.

The work covered by this Section shall consist of constructing a hot mixed, hot laid polymer modified open graded friction course wearing layer generally placed on an existing pavement. The typical cross section and the average weight per square yard will be shown on the plans. Requirements for all hot mix asphalt pavements as specified in Section 410 are applicable to this Section, subject to any exceptions contained herein. Quality Control/Quality Assurance (QC/QA) requirements as specified in Section 106 are applicable to this Section, subject to any exceptions contained herein.

420.02 Materials.

The materials furnished for use shall comply with the requirements of Section 410 and the following:

(a) AGGREGATES.

The aggregate shall be limited to 100% crushed, aggregates of the following: granite, quarried quartzite, slag, sandstone or manufactured lightweight aggregate, all of which shall be from approved sources and meet the appropriate requirements of Sections 801 and 802. However, if additional dust (- 200 {- 75 μm} material) is needed, mineral filler (meeting the requirements of Section 805) or agricultural limestone may be used. If agricultural limestone is used, it shall meet the requirements of ASTM C 602, Standard Specification for Agricultural Liming Materials, for Class E agricultural limestone, so that a minimum of 80.0 % of the material will pass the No. 8 {2.35 mm} sieve and 25.0 % will pass the No. 60 {0.250 mm} sieve. In addition, a minimum of 5.0 % will pass the No. 200 {75 μm} sieve. No more than 10.0 % agricultural limestone shall be used.

The aggregate shall be combined into a total blend that will produce an acceptable job mix within the gradation limits shown below in the following table. The blend shall be made from at least two stockpiles of different gradations. At least 10% of the blend shall be taken from each stockpile.

AGGREGATE GRADATION FOR OPEN GRADED FRICTION COURSE	
Sieve (Square Mesh Type)	Percent Passing By Weight {Mass}
3/4 inch {19.0 mm}	100
1/2 inch {12.5 mm}	85 - 100
3/8 inch {9.5 mm}	55 – 65
No. 4 {4.75 mm}	10 - 25
No. 8 {2.36 mm}	5 - 10
No. 200 {75 μm}	2 - 4

The requirements for allowing the use of RAP and RAS are given in Article 410.02.

(b) LIQUID ASPHALT BINDER.

The liquid binder shall be a polymer modified PG 76-22 meeting the requirements of Section 804. The proportion of liquid asphalt binder to total sample by weight {mass} shall be 4.7 % to 9.0 %. The exact proportion shall be fixed by the job mix formula.

Additives or modifiers shall be used to prevent stripping of liquid asphalt binder if stripping is observed during design, production or laydown. These additives or modifiers shall be furnished and used at no additional cost to the State.

(c) POLYMER.

The polymer additive shall meet the requirements of Section 811.

(d) LIQUID ASPHALT BINDER DRAINDOWN.

A fiber stabilizer meeting the requirements given in Section 410 shall be incorporated into the mix to reduce draindown. The fiber shall be blended into the mix in accordance with the requirements given in Section 410.

(e) TACK COAT MATERIALS

Tack coat materials shall either be a CQS-1hp asphalt emulsion used in conjunction with the spray paver equipment as required in Subarticle 420.04 (d) or “PG Asphalt for Trackless Tack” with conventional paving equipment. The CQS-1hp shall be smooth and homogeneous and shall meet the requirements shown in the following table:

CQS-1hp MODIFIED ASPHALT EMULSION			
TEST OF EMULSION			
Parameter	Test Method	Value	
Viscosity @ 77° F, SF	AASHTO T 59	20 Min.	150 Max.
Sieve Test, %	AASHTO T 59	-	0.1 Max.[1]
24-Hour Storage Stability, %	AASHTO T 59	-	1.0 Max. [2]
Residue By Distillation	AASHTO T 59	60 Min.	-
Oil Distillate, by Volume of Emulsion, %	AASHTO T 59	-	-
Particle Charge	AASHTO T 59	Positive [3]	
TEST OF RESIDUE FROM EMULSION			
Solubility in TCE, %	AASHTO T 44 [4]	97.5 Min.	-
Elastic Recovery @ 50 °F	AASHTO T 301	60.0 Min.	-
Penetration @ 77 °F	AASHTO T 49	60 Min.	110 Max.
Ductility @ 77.0 °F	AASHTO T 51	40 Min.	-
1. Sieve test may be waived based on successful application in the field. 2. After standing undisturbed for 24 hours, the surface shall show no white, milky-colored substance, but shall be a smooth homogeneous color throughout the sample. 3. If the Particle Charge Test is inconclusive, a pH test (AASHTO T 200) shall be used with a maximum of 6.7 allowable. 4. ASTM D 5546 may be used when polymers block the filter during the test.			

The original "PG Asphalt for Trackless Tack" (no RTFO or PAV testing) shall conform to the physical requirements shown in the following table:

SPECIFICATIONS FOR PG ASPHALT FOR TRACKLESS TACK		
Parameter	Specification	Test Method
Rotational Viscosity	Maximum 3 Pa•s @ 135 °C	AASHTO T 316
Penetration	Maximum 25 @ 77 °F {25 °C}, 100 g. 5s	AASHTO T49
Softening Point (°C)	Minimum 70	AASHTO T 53
Dynamic Shear, G*/sin δ	Minimum 1.0 kPa @ 82 °C	AASHTO T 315

420.03 Design

The Open Graded Friction Course shall be designed with a minimum air void content of 12% according to ALDOT-259, OPEN GRADED ASPHALT CONCRETE FRICTION COURSE DESIGN METHOD. The contractor shall have the responsibility for the design of Section 420 mixes. The laboratory compacted density as determined in the job-mix formula design shall not exceed 150 pounds per cubic foot {2400 kg/m^3}; this corresponds with a maximum specific gravity value of 2.837 or a bulk specific gravity of 2.411.

The work will be accepted on a LOT by LOT basis in accordance with the applicable requirements. Pay factors for air voids and density shall not apply.

420.04 Construction Requirements.

(a) GENERAL.

The requirements of Articles 410.03 through 410.07 shall apply except as modified hereinafter in this Article.

(b) RATE OF PLACEMENT OF TACK COAT.

The rate of application of the tack coat on the asphalt surface shall be 0.13 to 0.18 gallons per square yard within a tolerance of -0.02 and +0.02 gallons per square yard for the PG Asphalt for Trackless Tack. CQS-1hP asphalt emulsion shall be applied at a rate of 0.18 - 0.23 gallons per square yard within a tolerance of -0.02 and +0.02 gallons per square yard. A uniform distribution of tack coat across the mat shall be enforced and streaked tack shots shall not be accepted.

(c) CONVENTIONAL PAVING EQUIPMENT WITH THE USE OF "PG ASPHALT FOR TRACKLESS TACK"

The use of conventional paving equipment shall be allowed when the tack coat material used is "PG Asphalt for Trackless Tack" meeting the requirements given in Subarticle 420.02. "PG Asphalt for Trackless Tack" shall be applied at a temperature of 300 °F to 375 °F, on a clean dry surface.

(d) SPRAY PAVER PAVING EQUIPMENT WITH THE USE OF CQS-1HP ASPHALT EMULSION

The requirements given in Article 410.03 shall be applicable to the construction of the open graded friction course except for the following:

- The paving machine shall incorporate a tack distribution system, receiving hopper, feed conveyor, and a variable width, heated, ironing or vibratory type screed.

- The tack distribution system shall include metered mechanical pressure sprayer to accurately apply and monitor the rate of application of the emulsion for the tack. The rate shall be uniform across the entire paving width. It shall be applied at a temperature of 140 – 180 °F. Application shall be immediately in front of the screed unit. No wheel or other part of the paving machine shall come in contact with the tack before the paving mix is applied.

- Extensions added to the screed shall be provided with the same heating capability as the main screed unit, except for use on variable width tapered areas as approved by the Engineer.

(e) COMPACTION EQUIPMENT.

Item 410.03(a)5 is amended to require that steel wheel tandem (7 ton {6 metric ton} minimum size) rollers shall be furnished in sufficient numbers based on the quantity of material being placed to provide effective compaction coverage within the workable time period of the mix as designated by the Engineer. Rubber-tire rollers shall not be used.

(f) WEATHER AND TEMPERATURE LIMITATIONS.

The weather, air, and surface temperature limitations for (polymerized) HMA mixes are found in Subarticle 410.03(b).

(g) COMPACTING.

Subarticle 410.03(g) is amended to require that rolling shall be as approved by the Engineer; no density tests will be required.

420.05 Method of Measurement.

The accepted quantities of polymer modified open graded friction course will be measured as provided in Article 410.08.

The CQS-1hp emulsion or "PG Asphalt for Trackless Tack" for the tack coat will be measured in gallons in accordance with the requirements given in Article 109.02.

420.06 Basis of Payment.

(a) UNIT PRICE COVERAGE.

Polymer Modified Open Graded Friction Course, measured as noted above, will be paid for at the contract unit price bid in accordance with Article 410.09.

The unit price of the Open Graded Friction Course Tack Coat shall be full compensation for all materials, equipment, and labor required to furnish and place the tack.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

420 - A Polymer Modified Open Graded Friction Course – per ton {metric ton}

420 - B Open Graded Friction Course Tack Coat – per gallon

SECTION 423
STONE MATRIX ASPHALT (SMA)(FIBER STABILIZED ASPHALT CONCRETE)

423.01 Description.

The work covered by this Section shall consist of constructing a hot mix asphalt layer of fiber stabilized stone matrix asphalt pavement on a prepared surface in accordance with these specifications and in conformity with the lines, grades, typical cross section, and the placement rate shown on the plans or as directed. The plant, equipment, and construction requirements for this pavement are specified in Sections 106 and 410, subject to any exceptions herein. All 423 mixes shall be designed and produced in accordance with the requirements given in this Section and ALDOT-395, SMA Mix Design.

423.02 Materials.

(a) AGGREGATES.

1. PROCEDURE FOR ACCEPTANCE OF COARSE AND FINE AGGREGATES.

All fine and coarse aggregate furnished shall come from an approved producer who is participating in and meeting the requirements of ALDOT-249, *Procedure for Acceptance of Coarse and Fine Aggregates*. The producer's name shall be listed in the Department's *Materials, Sources, and Devices with Special Acceptance Requirements Manual*, List I-1. The Department has established a list of qualified producers of fine and coarse aggregates. Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list.

2. TYPES OF ACCEPTABLE COARSE AGGREGATES FOR SMA.

Coarse aggregate shall be aggregate retained on the No. 4 {4.75 mm} sieve. The virgin coarse aggregate shall be 100% crushed granite, quarried quartzite, limestone, sandstone, slag, or other 100% crushed manufactured stone meeting the requirements given in Section 801.

3. FLAT AND ELONGATED PARTICLES IN COARSE AGGREGATES FOR SMA.

The maximum amount of flat and elongated particles in coarse aggregate for SMA is given in the following table.

PERCENT OF FLAT AND ELONGATED PARTICLES IN COARSE AGGREGATE FOR SMA		
Test Method		Maximum
Flat & Elongated % by Count 3:1 (max to min)	ASTM D 4791 Section 8.4	20 %
Flat & Elongated % by Count 5:1 (max to min)	ASTM D 4791 Section 8.4	5 %

4. COARSE AGGREGATE SOUNDNESS FOR SMA.

The percent degradation of the source aggregate by the sodium sulfate soundness test (AASHTO T 104, Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate) after five cycles of testing shall not exceed 10 %.

5. DELETERIOUS MATERIALS AND ABSORPTION IN COARSE AGGREGATE FOR SMA.

The amount of deleterious substances and absorption in the coarse aggregate shall not exceed the limits given in the following table.

DELETERIOUS MATERIALS AND ABSORPTION IN COARSE AGGREGATE FOR SMA	
Coal and Lignite (Visual)	0.25 %
Clay Lumps and Friable Particles (AASHTO T 112)	0.25 %
Other local deleterious substances (Shale, Mica, Marcasite, etc.) (Visual)	2.0 %
Absorption (Absorption on the material passing the 3/4 inch {19.0 mm} sieve and retained on the No. 4 {4.75 mm} sieve) (AASHTO T 85 *). Applies to gravel aggregates only.	2.0 %
* Section 8.1 of AASHTO T 85 modified to require a 15 minute vacuum saturation period as per Section 6.3 of AASHTO T 209 prior to the required 15-19 hour soaking period.	

6. LOS ANGELES ABRASION CRITERIA FOR COARSE AGGREGATE FOR SMA.

The percent loss of the coarse aggregate by the LA Abrasion test (AASHTO T 96, Resistance to Abrasion of Small Size Aggregate by use of the Los Angeles Machine) shall not exceed 48 % except that, for Sandstone and Blast Furnace Slag, the LA Abrasion shall not exceed 55 %.

7. FINE AGGREGATE FOR SMA.

Fine aggregate shall be 100% crushed granite, limestone, sandstone, slag, or other 100% crushed manufactured stone meeting the requirements of Section 802 and the following table. The parent material shall meet the requirements given in Section 801.

FINE AGGREGATE QUALITY REQUIREMENTS FOR SMA		
Test Method	Minimum	Maximum
Uncompacted Voids %, AASHTO T 304*	45 %	100 %
Sand Equivalent %, AASHTO T 176*	50 %	100 %
Liquid Limit %, AASHTO T 89	0 %	25 %
Plasticity Index, AASHTO T 90	Non-plastic	
*The Sand Equivalent and Uncompacted Voids may be run on the blend of the aggregates.		

The fine aggregate shall be non-plastic when tested in accordance with AASHTO T 89, as modified by ALDOT-232, and AASHTO T 90 and shall have a maximum of 1.0 % clay lumps and friable particles as determined by AASHTO T 112. It shall consist of hard, tough grain, free of injurious amounts of clay, loam, or other deleterious substances.

8. MINERAL FILLER FOR SMA.

The mineral filler shall meet the requirements of Section 805.

(b) RECYCLED ASPHALT PAVEMENT (RAP) & RECLAIMED ASPHALT SHINGLES (RAS).

The requirements for allowing the use of RAP and RAS are given in Article 410.02.

(c) BLEND OF AGGREGATES.

The combined aggregates shall conform to the percent passing by volume requirements given in the following table.

PERCENT PASSING BY VOLUME OF AGGREGATE FOR SMA										
Sieve Size	1.5 inch {37.5 mm} Maximum Aggregate Size		1 inch {25.0 mm} Maximum Aggregate Size		3/4 inch {19.0 mm} Maximum Aggregate Size		1/2 inch {12.5 mm} Maximum Aggregate Size		3/8 inch {9.5 mm} Maximum Aggregate Size	
	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit
1.5 inch {37.5 mm}	100	100								
1 inch {25.0 mm}	90	100	100	100						
3/4 inch {19.0 mm}	30	86	90	100	100	100				
1/2 inch {12.5 mm}	26	63	50	74	90	100	100	100		
3/8 inch {9.5 mm}	24	52	25	60	26	78	90	100	100	100
# 4 {4.75 mm}	20	28	20	28	20	28	26	60	90	100
# 8 {2.36 mm}	16	24	16	24	16	24	20	28	28	65
# 16 {1.18 mm}	13	21	13	21	13	21	13	21	22	36
# 30 {600 μm}	12	18	12	18	12	18	12	18	18	28
# 50 {300 μm}	12	15	12	15	12	15	12	15	15	22
# 200 {75 μm}	8	10	8	10	8	10	8	10	12	15

An example of how to blend aggregate based upon volume can be found in ALDOT-395, SMA Mix Design. The production tolerances for the above gradation bands are as specified in Item 410.02(d)7, except that the tolerance for the No. 4 {4.75 mm} sieve is +/- 4% and for the 3/8 inch {9.5 mm} sieve is +/- 6%.

Aggregates that tend to polish under traffic, such as limestone, dolomite, or marble, shall be permitted only in widening as defined by Article 410.01, shoulder paving, underlying layers, and layers that are to be covered by Polymer Modified Open Graded Friction Course (Section 420) mix in this contract, except as noted in the following table.

ALLOWABLE CARBONATE STONE CRITERIA FOR SMA	
BPN 9 Value Of Aggregate Source *	Maximum Allowable Percentage Of Carbonate Stone
≤ 25	30
26 through 28	35
29 through 31	40
32 through 34	45
≥ 35	50
* This value, BPN 9, is made using the British Pendulum Tester on aggregate source specimen polished for 9 hours on an accelerated polishing machine known as the British Wheel as per ASTM D 3319, ASTM E 303 and BMTP-382.	

In no case shall the total amount of virgin carbonate stone in the combined mixture used as actual wearing surface layers exceed the percentage shown in Table 4. When parts of the carbonate stone used in the mix are from differing strata of material or coming from multiple sources that are represented by different BPN 9 values, the lowest BPN 9 value will be used.

(d) LIQUID ASPHALT BINDER.

1. REQUIRED TYPE OF LIQUID ASPHALT BINDER FOR SMA.

Unless otherwise shown on the plans, for pavement layers in the top 2 inches the liquid asphalt binder shall meet the requirements of Section 804 and shall be polymer-modified to meet a PG 76-22 as given in Section 811. For pavement layers below the top 2 inches the liquid asphalt binder shall be PG 67-22 and shall meet the requirements of Section 804. If Open Graded Friction Course (Section 420) layers are required, the top 2 inches shall be measured from the bottom of the Open Graded Friction Course layer.

2. REQUIRED MINIMUM AMOUNT OF LIQUID ASPHALT BINDER FOR SMA.

The minimum liquid asphalt binder content shall be as given in the following table (by weight {mass} of total mix.

MINIMUM LIQUID ASPHALT BINDER CONTENT FOR SMA			
Maximum Aggregate Size (inches) {mm}	Nominal Aggregate Size (inches) {mm}	Minimum Liquid Asphalt Binder Content (% by weight) {% by mass}	Minimum Liquid Asphalt Binder Content for mixes containing RAS (% by weight) {% by mass}
1.5 {37.5}	1.0 {25}	5.3	5.5
1.0 {25.0}	3/4 {19.0}	5.5	5.7
3/4 {19.0}	1/2 {12.5}	5.7	5.9
1/2 {12.5}	3/8 {9.5}	5.9	6.1
3/8 {9.5}	No. 4 {4.75}	6.1	6.3

3. LIQUID ASPHALT BINDER DRAINDOWN.

A fiber stabilizer meeting the requirements given in Section 410 shall be incorporated into the mix to reduce draindown. The fiber shall be blended into the mix in accordance with the requirements given in Section 410. RAS may be allowed as a fiber stabilizer provided it meets the requirements in Section 410.

423.03 Design.

All SMA mixes shall be designed according to ALDOT-395, SMA Mix Design. SMA mixes shall be designed using a 50 blow Marshall design or a 60 gyration gyratory compactor design. The SMA shall have a minimum VMA of 17, a VCA_{MIX} less than the VCA_{DRC} (calculating Voids in the Coarse Aggregate is explained in ALDOT-395 SMA Mix Design) and air voids of 3.5% for SMA mixes containing RAS or 4.0 % for all other SMA mixes. The SMA mix shall be designed with a minimum tensile strength ratio of 0.80 according to ALDOT-361. The mix shall exhibit 4.50 mm or less rutting when tested in accordance with ALDOT-401, Rutting Susceptibility Determination of Asphalt Paving Mixtures Using the Asphalt Pavement Analyzer.

423.04 Hot Mix Asphalt Plant Requirements.

(a) MINERAL FILLER.

To ensure accurate metering and proportioning, the introduction of the mineral filler shall be in accordance with Section 4.3 of AASHTO M 156 as specified in ALDOT-324. Adequate dry storage shall be provided for the mineral filler. In a batch plant, mineral filler shall be added directly into the weigh hopper. In a drum plant, mineral filler shall be added directly into the drum mixer near enough to the liquid asphalt binder line so that the mineral filler is captured by the liquid asphalt binder. Note: For most SMA projects, the flow rate of the mineral filler governs the plant production rate.

(b) HOT-MIXTURE STORAGE.

SMA shall be stored according to the requirements as given in ALDOT 324, "Plant Requirements for Plants Producing Hot-Mixed, Hot-Laid Asphalt Mixtures". SMA shall not be heated above 350 °F {177 °C} without the approval of the Engineer.

423.05 Construction Requirements.

(a) GENERAL.

Construction requirements shall be the same as specified in Articles 410.03 through 410.07 except as noted in this Article.

(b) WEATHER AND TEMPERATURE LIMITATIONS.

The weather, air and surface temperature limitations for (polymerized) HMA mixes are found in Subarticle 410.03(b).

(c) SURFACE PREPARATION.

A thin tack coat meeting the requirements of Section 405 shall be applied to ensure uniform and complete adherence of the overlay.

(d) COMPACTION.

Due to the nature of stone matrix asphalt mixture, the surface shall be rolled immediately. Rollers shall move at a uniform speed, not to exceed 3 miles per hour {5 km/hr}, with the drive roller nearest the paver. Rolling shall be continued until all roller marks are eliminated and the required density has been obtained. The Contractor shall monitor density during the compaction process using the nondestructive testing devices approved in Section 306 of the Specifications to ensure that the required density is being obtained. The device shall either be calibrated to roadway cores or gage counts and shall be used to determine the rolling pattern producing maximum density. If vibratory compaction causes aggregate breakdown or forces liquid asphalt binder to the surface, the vibratory mode shall be turned off and the roller shall operate in static mode only.

To prevent adhesion of the mixture to the rollers, it shall be necessary to keep the wheels properly moistened with water mixed with very small quantities of detergent or other approved material.

423.06 Method of Measurement.

The accepted quantities of stone matrix asphalt binder layer and stone matrix asphalt wearing layer will be measured as provided in Article 410.08. The SMA mix shall be evaluated for liquid asphalt binder content, laboratory compacted air voids, and in-place density; pay factors will be applied.

423.07 Basis of Payment.

(a) UNIT PRICE COVERAGE.

Stone Matrix Asphalt Binder Layer and Stone Matrix Asphalt Wearing Layer, measured as noted above, will be paid for at the contract unit price bid in accordance with Article 410.09.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

423-A Stone Matrix Asphalt Wearing Layer, _*_ Maximum Aggregate Size - per ton {metric ton}

423-B Stone Matrix Asphalt Binder Layer, _*_ Maximum Aggregate Size - per ton {metric ton}

* Specify Maximum Aggregate Size, either 1.5, 1, 3/4, 1/2 or 3/8 inches {37.5 mm, 25 mm, 19 mm, 12.5 mm, or 9.5 mm}

SECTION 424
SUPERPAVE BITUMINOUS CONCRETE BASE, BINDER, AND WEARING SURFACE LAYERS

424.01 Description

The work covered by this Section shall consist of a hot or warm bituminous plant mixed pavement layer placed on a prepared surface in accordance with these specifications and in reasonably close conformity with the lines, grades, typical cross section, and the approximate placement rate shown on the plans or as directed.

The Contractor may use either hot mix or warm mix for all Superpave ESAL Range mixes in Section 424.

General requirements for all bituminous concrete pavements as specified in Section 410 are applicable to this Section, subject to any exceptions contained herein. Quality Control/Quality Assurance (QC/QA) requirements as specified in Section 106 are applicable to this section, subject to any exceptions contained herein.

The work will be accepted on a LOT by LOT basis in accordance with the applicable requirements.

424.02 Materials.

The materials furnished for use shall conform to the requirements of Section 410 and the following:

(a) AGGREGATES.

1. PROCEDURE FOR ACCEPTANCE OF COARSE AND FINE AGGREGATES.

All fine and coarse aggregate furnished shall come from an approved producer who is participating in and meeting the requirements of ALDOT-249, *Procedure for Acceptance of Coarse and Fine Aggregates*. The producer's name shall be listed in the Department's *Materials, Sources, and Devices with Special Acceptance Requirements Manual*, List I-1. The Department has established a list of qualified producers of fine and coarse aggregates. Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list.

2. TYPES OF ACCEPTABLE COARSE AGGREGATES FOR SUPERPAVE.

Coarse aggregate shall be aggregate retained on the No. 4 {4.75 mm} sieve.

Coarse aggregate shall consist of crushed (or uncrushed) gravel with a bulk specific gravity greater than 2.550 (AASHTO T 85), crushed stone, or crushed slag, or a combination thereof having hard, strong, durable pieces, free from adherent coatings, and meeting all requirements of these specifications.

3. FLAT AND ELONGATED PARTICLES IN COARSE AGGREGATES FOR SUPERPAVE.

The maximum amount of flat and elongated particles in coarse aggregate for Superpave is given in the following table.

PERCENT OF FLAT AND ELONGATED PARTICLES IN COARSE AGGREGATE FOR SUPERPAVE	
Test Method	Maximum
Flat & Elongated % by Count 5:1 (max to min) ASTM D 4791 Section 8.4	10 % *
* Shall not apply to the 3/8 inch {9.5 mm} mix or to ESAL Range A/B	

4. COARSE AGGREGATE SOUNDNESS FOR SUPERPAVE.

The percent degradation of the source aggregate by the sodium sulfate soundness test (AASHTO T 104, Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate) after five cycles of testing shall not exceed 10 %.

5. DELETERIOUS MATERIALS AND ABSORPTION IN COARSE AGGREGATE FOR SUPERPAVE.

The amount of deleterious substances and absorption in the coarse aggregate shall not exceed the following limits:

RESTRICTION OF DELETERIOUS MATERIALS AND ABSORPTION IN COARSE AGGREGATE FOR SUPERPAVE	
Coal and Lignite (Visual)	0.25 %
Clay Lumps and Friable Particles (AASHTO T 112)	0.25 %
Other local deleterious substances (Shale, Mica, Marcasite, etc.) (Visual)	2.0 %
Absorption (Absorption on the material passing the 3/4 inch {19.0 mm} sieve and retained on the No. 4 {4.75 mm sieve}) (AASHTO T 85 *). Applies to gravel aggregates only.	2.0 %
* Section 8.1 of AASHTO T 85 modified to require a 15 minute vacuum saturation period as per Section 6.3 of AASHTO T 209 prior to the required 15-19 hour soaking period.	

6. LOS ANGELES ABRASION CRITERIA FOR COARSE AGGREGATE FOR SUPERPAVE.

The percent loss of the coarse aggregate by the LA Abrasion test (AASHTO T 96, Resistance to Abrasion of Small Size Aggregate by use of the Los Angeles Machine) shall not exceed 48 % except that, for Sandstone and Blast Furnace Slag, the LA Abrasion shall not exceed 55 %.

7. FINE AGGREGATE FOR SUPERPAVE.

Fine aggregate shall be aggregate passing the No. 4 {4.75 mm} sieve. Gravel used to manufacture fine aggregate shall have a bulk specific gravity greater than 2.550 (AASHTO T 85).

The fine aggregate shall be non-plastic when tested in accordance with AASHTO T 89, as modified by ALDOT-232, and AASHTO T 90 and shall have a maximum of 1.0 % clay lumps and friable particles as determined by AASHTO T 112. It shall consist of hard, tough grain, free of injurious amounts of clay, loam, or other deleterious substances.

8. CLAY CONTENT FOR SUPERPAVE.

The amount of clay material, as indicated by the sand equivalent, measured on the aggregate passing the No. 4 {4.75 mm} sieve as determined by AASHTO T 176, Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test, shall be no less than the values defined in the following table according to the total design traffic in equivalent single axle loads (ESALs).

CLAY CONTENT CRITERIA FOR SUPERPAVE		
ESAL Range	Traffic (ESALs)	Sand Equivalent
A/B	ESALs $< 1.0 \times 10^6$	$\geq$ 40.0
C/D	$1.0 \times 10^6 \leq$ ESALs $< 1.0 \times 10^7$	$\geq$ 45.0
E	$1.0 \times 10^7 \leq$ ESALs $< 3.0 \times 10^7$	$\geq$ 45.0

9. MINERAL FILLER FOR SUPERPAVE.

Mineral filler shall consist of finely divided mineral matter such as rock dust, slag dust, hydrated lime, hydraulic cement, or fly ash meeting the requirements of Section 805.

The introduction of mineral filler shall be in accordance with AASHTO M 156, Section 3.3, as specified in ALDOT-324, with the additional requirement that accurate proportioning shall be accomplished by means of pneumatic or mechanical metering.

(b) RECYCLED ASPHALT PAVEMENT (RAP) & RECLAIMED ASPHALT SHINGLES (RAS).

The requirements for allowing the use of RAP and RAS are given in Article 410.02.

(c) BLEND OF AGGREGATES.

1. GRADATIONS FOR BLEND OF AGGREGATES.

The coarse and fine aggregates, mineral filler, and recycled material shall be combined in a total blend that will produce an acceptable job mix within the gradation limits determined by the maximum and minimum control points as shown in the following tables. Maximum particle size is defined as the sieve size that is two sizes larger than the first sieve to retain more than 10 % of the material. The sequence of sieve sizes to be used in determining maximum particle size is given in the following tables. Gradation charts illustrating gradation requirements are given in Article 424.03.

The required mix will be shown on the plans. Also, all ESAL range "E" mixes shall exhibit 4.50 mm or less rutting when tested according to ALDOT-401, Rutting Susceptibility Determination of Asphalt Paving Mixtures Using the Asphalt Pavement Analyzer.

AGGREGATE GRADATION CONTROL POINTS FOR SUPERPAVE 1 1/2 inch {37.5 mm} Maximum Aggregate Size Mix		
	Control Point (Percent Passing)	
Sieve Size	Minimum	Maximum
No. 200 {75 μm}	1	7
No. 8 {2.36 mm}	19	45
3/4" {19 mm}	19	90
1" {25 mm} Nominal	90	100
1.5" {37.5 mm} Maximum	100	-

AGGREGATE GRADATION CONTROL POINTS FOR SUPERPAVE 1 inch {25.0 mm} Maximum Aggregate Size Mix		
	Control Point (Percent Passing)	
Sieve Size	Minimum	Maximum
No. 200 {75 μm}	2	8
No. 8 {2.36 mm}	23	49
1/2" {12.5 mm}	23	90
3/4" {19 mm} Nominal	90	100
1" {25 mm} Maximum	100	-

AGGREGATE GRADATION CONTROL POINTS FOR SUPERPAVE 3/4 inch {19.0 mm} Maximum Aggregate Size Mix		
	Control Point (Percent Passing)	
Sieve Size	Minimum	Maximum
No. 200 {75 μm}	2	10
No. 8 {2.36 mm}	28	58
3/8" {9.5 mm}	28	90
1/2" {12.5 mm} Nominal	90	100
3/4" {19.0 mm} Maximum	100	-

AGGREGATE GRADATION CONTROL POINTS FOR SUPERPAVE 1/2 inch {12.5 mm} Maximum Aggregate Size Mix		
	Control Point (Percent Passing)	
Sieve Size	Minimum	Maximum
No. 200 {75 μm}	2	10
No. 8 {2.36 mm}	32	67
No. 4 {4.75 mm}	32	90
3/8" {9.5 mm} Nominal	90	100
1/2" {12.5 mm} Maximum	100	-

AGGREGATE GRADATION CONTROL POINTS FOR SUPERPAVE 3/8 inch {9.5 mm} Maximum Aggregate Size Mix		
	Control Point (Percent Passing)	
Sieve Size	Minimum	Maximum
No. 200 {75 μm}	6	12
No. 16 {1.18 mm}	30	60
No. 4 {4.75 mm} Nominal	75	100
3/8" {9.5 mm} Maximum	95	100
Note: Up to 5% may be retained on the maximum size sieve (3/8 inch {9.5 mm}) and up to 25% may be retained on the nominal size sieve (#4 {4.75 mm}).		

2. COARSE AGGREGATE ANGULARITY FOR BLEND OF AGGREGATES.

The coarse aggregate angularity shall be measured on the total blended aggregate retained on the No. 4 {4.75 mm} sieve in accordance with ASTM D 5821.

A fractured face is defined as an angular, rough, or broken surface of an aggregate particle created by crushing, by other artificial means, or by nature. A face is considered fractured only if it has a projected area at least as large as one-quarter of the maximum projected area (maximum cross-sectional area) of the particle and has sharp, well-defined edges.

The percent by weight {mass} of the coarse particles of the blended aggregate retained on the No. 4 {4.75 mm} sieve with one fractured face and with two or more fractured faces shall be no less than the values in the following table.

COARSE AGGREGATE ANGULARITY REQUIREMENTS FOR SUPERPAVE			
ESAL Range	Traffic (ESALs)	Wearing Surface & Binder Layers	Base Layers
A/B	ESALs $< 1.0 \times 10^6$	75 / -	50 / -
C/D	$1.0 \times 10^6 \leq$ ESALs $< 1.0 \times 10^7$	85 / 80	60 / -
E	$1.0 \times 10^7 \leq$ ESALs $< 3.0 \times 10^7$	95 / 90	80 / 75
Note: "85 / 80" denotes that 85 % of the coarse aggregate has at least one fractured face and 80 % has two or more fractured faces.			

3. FINE AGGREGATE ANGULARITY FOR BLEND OF AGGREGATES.

The percent air voids in loosely compacted fine aggregate, measured according to AASHTO T 304, Method "A", or ASTM C 1252, Method "A", *Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)* shall be no less than the values in the following table.

FINE AGGREGATE ANGULARITY REQUIREMENTS FOR SUPERPAVE			
ESAL Range	Traffic (ESALs)	Minimum % Air Void	
		Base	Binder & Surface
A/B	ESALs $< 1.0 \times 10^6$	43	43
C/D	$1.0 \times 10^6 \leq$ ESALs $< 1.0 \times 10^7$	43	45
E	$1.0 \times 10^7 \leq$ ESALs $< 3.0 \times 10^7$	43	45

4. RESTRICTIONS IN THE USE OF CARBONATE STONE FOR BLEND OF AGGREGATES.

The restrictions for the use of carbonate stone are given in the following table. These restrictions do not apply to widening as defined in Article 410. 01, shoulder paving, underlying layers, and layers that are to be covered by Polymer Modified Open Graded Friction Course (Section 420) mix in this contract.

CRITERIA FOR THE USE OF CARBONATE STONE IN SUPERPAVE	
BPN 9 Value Of Aggregate Source *	Maximum Allowable Percentage Of Carbonate Stone
≤ 25	30
26 through 28	35
29 through 31	40
32 through 34	45
≥ 35	50
* This value, BPN 9, is made using the British Pendulum Tester on aggregate source specimen polished for 9 hours on an accelerated polishing machine known as the British Wheel as per ASTM D 3319, ASTM E 303 and ALDOT-382.	

In no case shall the total amount of virgin carbonate stone in the combined mixture used as actual wearing surface layers that are exposed to traffic exceed the percentage shown in the above table. When parts of the carbonate stone used in the mix are from differing strata of material or coming from multiple sources that are represented by different BPN 9 values, the lowest BPN 9 value will be used.

(d) LIQUID ASPHALT BINDER.

Liquid asphalt binders shall come from an approved producer who is participating in and meeting the requirements of ALDOT-243, *Acceptance Program For Asphalt Materials*. The producer's name shall be listed in the Department's *Materials, Sources, and Devices With Special Acceptance Requirements* Manual, List I-4. The Department has established a list of qualified producers of asphalt materials. Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list. Unless shown otherwise on the plans or in the proposal, liquid asphalt binder for use in all mixes shall meet the requirements of AASHTO M 320, *Standard Specification For Performance Graded Asphalt Binder,* as modified by the requirements given in the following table and Section 804.

ALLOWABLE ASPHALT BINDER GRADES FOR SUPERPAVE			
ESAL Range	Traffic (ESALs)	Base, Lower, & Upper Binder Layers	Wearing Surface Layers
A/B	ESALs < $1.0x10^6$	PG 67-22	PG 67-22
C/D	$1.0x10^6 \leq$ ESALs < $1.0x10^7$	PG 67-22	PG 67-22
E	$1.0x10^7 \leq$ ESALs < $3.0x10^7$	PG 67-22	PG 76-22
The asphalt binder shall be PG 76-22 for leveling when the top of the leveling is within 2 inches {50 mm} of the final pavement surface. The asphalt binder may be PG 67-22 for leveling that is not within 2 inches {50 mm} of the final pavement surface and for all patching and widening;. If Open Graded Friction Course (Section 420) layers are required, the final pavement surface shall be the surface of the layer below these layers.			

Asphalt Binders shall meet the requirements of Section 804.

Polymer modifiers shall be blended at an approved refinery and meet the requirements of Section 811. Approved Warm Mix additives or processes are given in List II-27, "Warm Mix Asphalt Products and Processes" of the Materials, Sources, and Devices with Special Acceptance Requirements manual.

(e) MIX PROPERTIES.

1. AIR VOIDS (Va).

The design air voids for all levels of traffic is 3.5 % for mixes containing RAS and 4.0 **% for all other mixes**.

2. VOIDS IN MINERAL AGGREGATE (VMA).

The job mix shall be designed at a minimum VMA given in the following table.

VOIDS IN MINERAL AGGREGATE DESIGN VMA FOR SUPERPAVE ***		
Maximum Aggregate Size * (inches) {mm}	Nominal Aggregate Size (inches) {mm}	Minimum VMA (%)
3/8 {9.5 }	No. 4 {4.75}	16.5 **
1/2 {12.5 }	3/8 {9.5}	15.5
3/4 {19.0 }	1/2 {12.5}	14.5
1 {25.0 }	3/4 {19.0}	13.5
1.5 {37.5 }	1 {25.0}	12.5
* As defined in Subarticle 424.02(c) ** All 3/8" (9.5 mm} mixes where the ESAL range is greater than A/B shall have a maximum VMA of 18.0. *** Production VMA may be 0.5 lower than design VMA.		

3. LIQUID ASPHALT BINDER CONTENT (Pb).

The job mix shall be designed at a minimum Liquid Asphalt Binder Content (Pb) given in the following table. Production tolerances shall be governed by the pay factors in Table III, Section 410.08.

LIQUID ASPHALT BINDER CONTENT (Pb) CRITERIA FOR SUPERPAVE			
Maximum Aggregate Size* (inches) {mm}	Nominal Aggregate Size (inches) {mm}	Minimum Liquid Asphalt Binder Content (Pb) by Percent of Total Mix**	Minimum Liquid Asphalt Binder Content (Pb) for mixes containing RAS by Percent of Total Mix**
3/8 {9.5 }	No. 4 {4.75}	5.90	6.1
1/2 {12.5 }	3/8 {9.5}	5.50	5.7
3/4 {19.0 }	1/2 {12.5}	5.10	5.3
1 {25.0 }	3/4 {19.0}	4.40	4.6
1.5 {37.5 }	1 {25.0}	4.20	4.4
* As defined in Subarticle 424.02(d) ** Nd = 60			

4. DUST PROPORTION (D/Pbe).

The ratio of the percent by weight {mass} of aggregate passing the 75 µm sieve to the effective asphalt content expressed as percent by weight {mass} of the total mix shall be between 0.60 and 1.4. All 3/8 inch {9.5 mm} mixes shall have a dust to effective asphalt ratio range of 0.90 to 2.00. These ratio limits apply to both the design and production phases. Effective asphalt content is that liquid asphalt binder not absorbed into the aggregate pore structure and is determined in accordance with Section 4.09 of the Asphalt Institute's, MS-2, *Mix Design Methods for Asphalt Concrete*.

5. LIQUID ASPHALT BINDER DRAINDOWN.

A fiber stabilizer meeting the requirements given in Section 410 may be incorporated into the mix to reduce draindown. The fiber shall be blended into the mix in accordance with the requirements given in Section 410.

6. RESISTANCE TO MOISTURE-INDUCED DAMAGE.

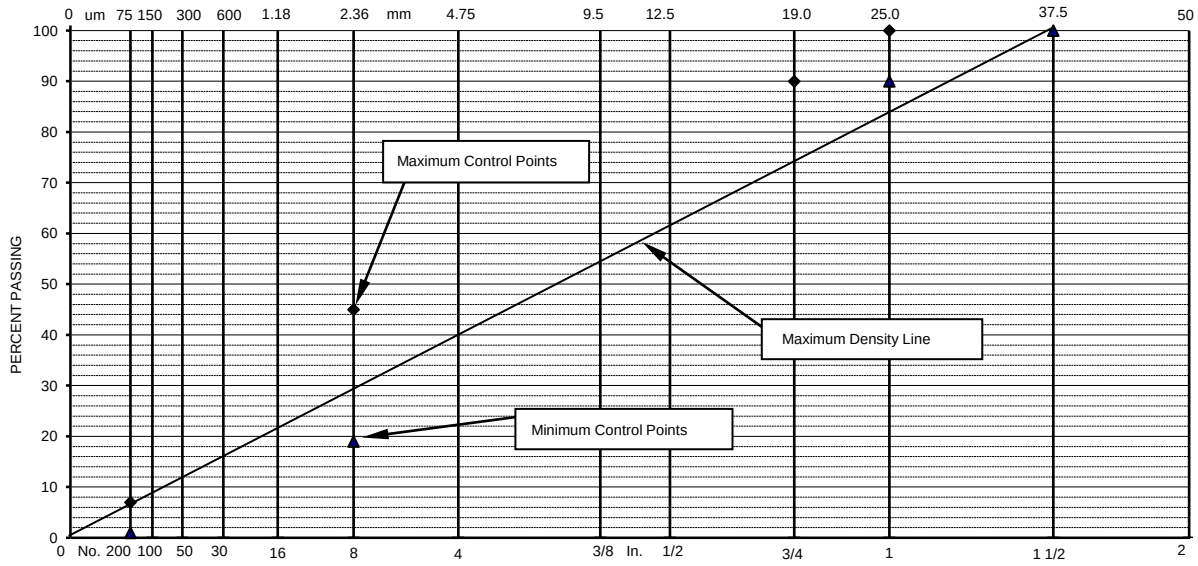
All mixes shall be designed and produced to have a tensile strength ratio (TSR) of at least 0.80 when compacted according to ALDOT-384 at 7.0 % air voids and tested in accordance with AASHTO T 283 as modified by ALDOT-361, except the specimen shall be 6.00" {150 mm} in diameter and 3.75" {95 mm} in height.

(f) DESIGN PROCEDURE.

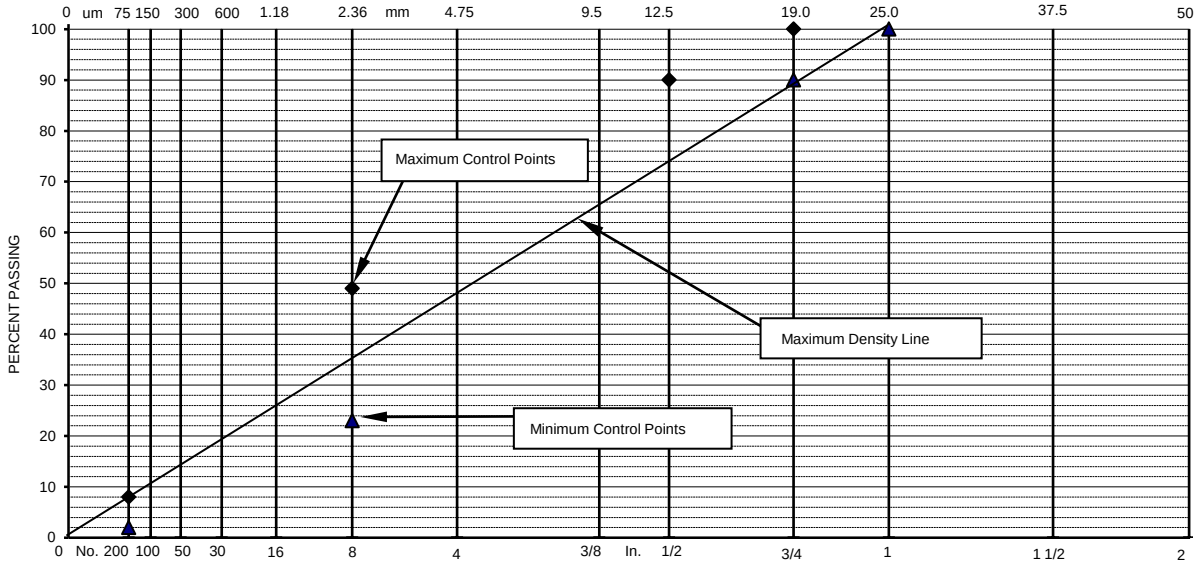
All Superpave mixes with 100 % virgin aggregate shall be designed in accordance with ALDOT-384, *Mix Design Procedure for Superpave Level I*. All other Superpave mixes containing RAP shall be designed in accordance with ALDOT-388, *Superpave Volumetric Mix Design Procedure Using Recycled Asphalt Pavement*. All Superpave Gyratory Compactors shall have their angle of gyration verified by the Engineer following the procedure in AASHTO T 344, Standard Method of Test for Evaluation of Superpave Gyratory Compactor (SGC) Internal Angle of Gyration Using Simulated Loading. This includes all design, quality control, and quality assurance SGCs. The compactors shall tilt the specimen molds at an average internal angle of 20.2 ± 0.35 mrad (1.16± 0.02 degrees).

424.03 Gradation Requirements.

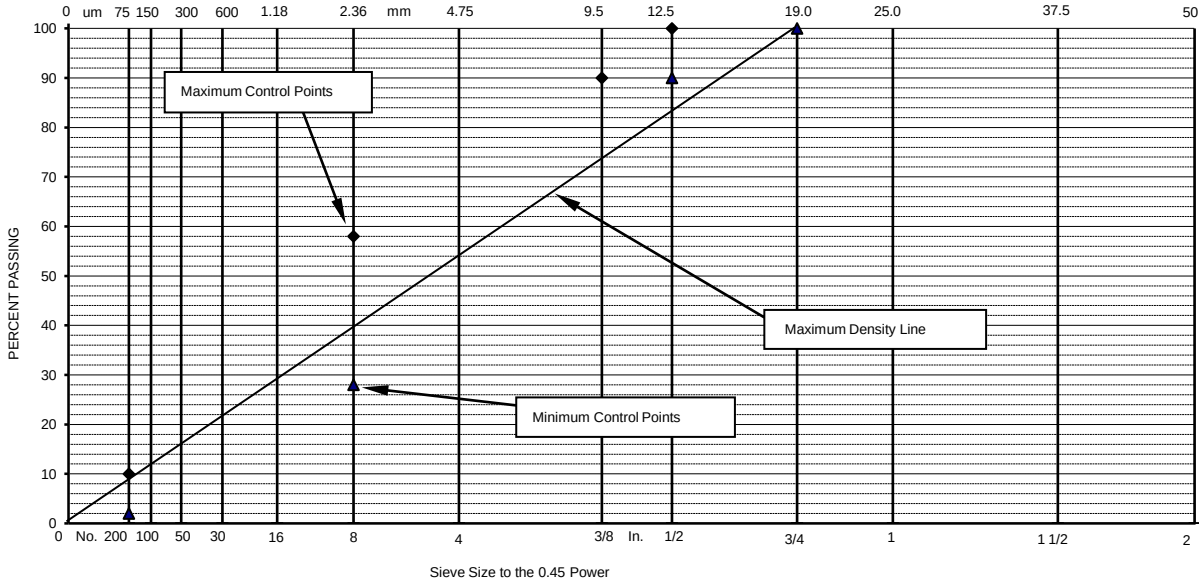
GRADATION CHART FOR 1 1/2 inch {37.5 mm} MAXIMUM SIZE AGGREGATE



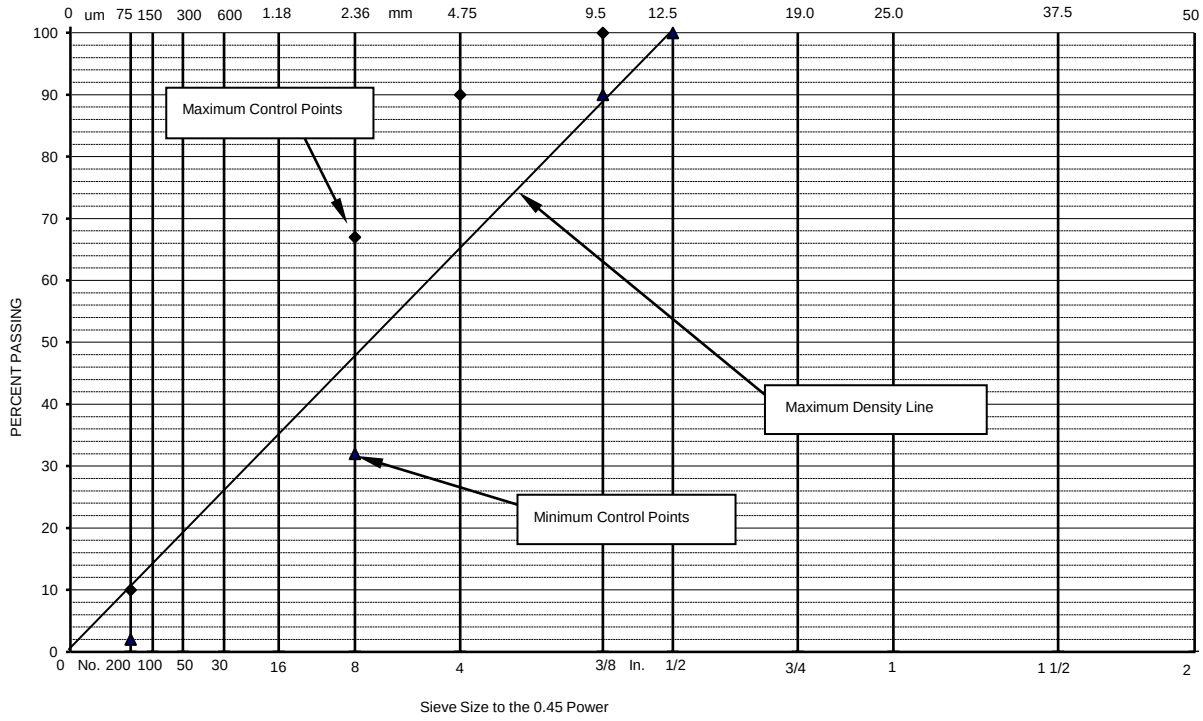
GRADATION CHART FOR 1 inch {25 mm} MAXIMUM SIZE AGGREGATE

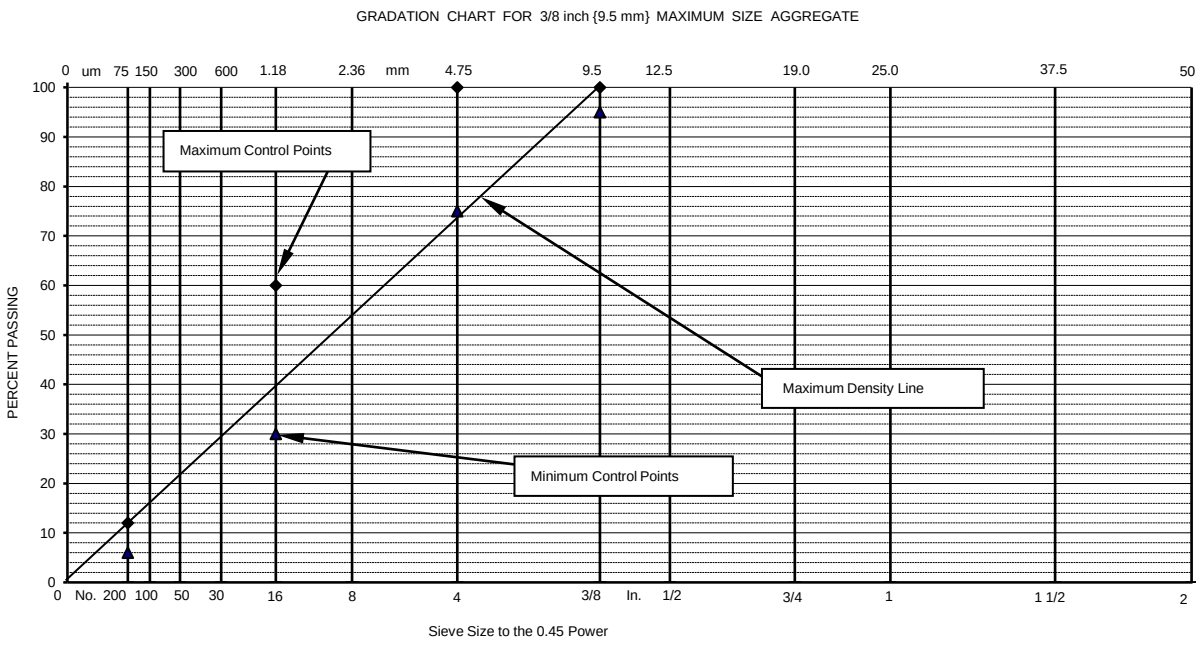


GRADATION CHART FOR 3/4 inch {19 mm} MAXIMUM SIZE AGGREGATE



GRADATION CHART FOR 1/2 inch {12.5 mm} MAXIMUM SIZE AGGREGATE





424.04 Construction Requirements.

(a) GENERAL.

The mixing temperature shall not exceed 350 °F {177 °C}.

(b) BINDER LAYER AND WEARING SURFACE LAYER.

Construction requirements shall be as specified in Articles 410.03 through 410.07.

(c) BASE LAYER.

The construction requirements for base layers shall be as specified in Articles 410.03 through 410.07, except as follows:

The edges shall be trimmed immediately after final rolling, using an accurately aligned string or wire, to a tolerance of 2 inches {50 mm} outside the theoretical edge of the layer and to a slope not flatter than 1:1.

Any edge distorted by rolling shall be promptly corrected.

(d) PREPARATION OF MIXTURES - MOISTURE CONTENT.

Each time an asphalt content measurement is made (ALDOT-354 or AASHTO T 308), the amount of moisture in the mixture shall be determined, regardless of aggregate type, as specified in ALDOT-130 and reported on Form BMT-20. The moisture determination shall be used in computing the corrected asphalt content. Moisture samples shall be taken with the asphalt content samples from the loaded truck. Moisture in the mixture shall not exceed 0.20% by weight {mass}.

(e) PRODUCTION TOLERANCES.

All mixtures furnished for use shall conform to the approved job mix formula (JMF) within the tolerances set in Article 410.02. Mixture gradations may be produced provided the gradations are within the tolerances.

424.05 Method of Measurement.

The accepted quantities of Superpave Bituminous Concrete Wearing Surface Layer, Superpave Bituminous Concrete Binder Layer, and Superpave Bituminous Concrete Base Layer will be measured as provided in Article 410.08, subject to any exceptions contained herein.

424.06 Basis of Payment.

(a) UNIT PRICE COVERAGE.

Superpave Bituminous Concrete Wearing Surface Layer, Superpave Bituminous Concrete Binder Layer, and Superpave Bituminous Concrete Base Layer will be paid for at the contract unit price bid in accordance with Article 410.09, subject to any exceptions contained herein.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

424-A Superpave Bituminous Concrete Wearing Surface Layer, __**__ ,
__***__ Maximum Aggregate Size Mix, ESAL Range __****__ - per ton {metric ton}

424-B Superpave Bituminous Concrete __*__ Binder Layer, __**__ ,
__***__ Maximum Aggregate Size Mix, ESAL Range __****__ - per ton {metric ton}

424-C Superpave Bituminous Concrete Base Layer, __**__ ,
__***__ Maximum Aggregate Size Mix, ESAL Range __****__ - per ton {metric ton}

* Specify either “Upper” or “Lower”.

** Specify "Patching", "Leveling", "Widening", etc. only when required.

*** Specify Maximum Aggregate Size: 3/8", 1/2", 3/4", 1", or 1.5" {9.5 mm, 12.5 mm, 19.0 mm, 25.0 mm, or 37.5 mm}.

**** Specify “A/B”, “C/D”, or “E”.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: May 10, 2012 Special Provision No. 12-0292

EFFECTIVE DATE: September 1, 2012

SUBJECT: Fencing Materials.

Alabama Standard Specifications, 2012 Edition, SECTION 871 shall be replaced by the following:

SECTION 871
FENCING MATERIALS

871.01 Chain Link Fence.

Materials for chain link fence unless specified otherwise on the plans shall conform to the following:

(a) FABRIC.

Fence fabric shall meet the requirements of AASHTO M 181 using 2 inch uniform square mesh made from 0.148 inch (9 gage) {3.75 mm} wire with either a Type I, Class D (zinc coated steel); or Type II (Aluminum coated steel) finish. When a polyvinyl chloride coating is specified either a Class A or a Class B coating will be acceptable.

(b) SUPPORTS.

Supports shall meet the requirements of AASHTO M 181 and be either metallic coated steel Grade 1 or Grade 2, or Aluminum. Minimum sizes and weights of posts, rails and framing for all steel elements shall be as follows:

Steel Fence Supports & Framing	
Line Post 3-6 ft. {1 - 2 m} high fence	1.90" O.D. Grade 1 Pipe @ 2.72 #/ft. {48 mm O.D. Grade 1 Pipe @ 4.05 kg/m}
	1.90" O.D. Grade 2 Pipe @ 2.28#/ft. {48 mm O.D. Grade 2 Pipe @ 3.39 kg/m}
	1.875" x 1.625" x .105" "C" Section @ 1.85 #/ft. {47 mm x 41 mm x 2.5 mm "C" Section @ 2.75 kg/m}
Line Post 7-12 ft. {2.1 - 4 m} high fence	2.375" O.D. Grade 1 Pipe @ 3.65 #/ft. {60 mm O.D. Grade 1 Pipe @ 5.43 kg/m}
	2.375" O.D. Grade 2 Pipe @ 3.12 #/ft. {60 mm O.D. Grade 2 Pipe @ 4.64 kg/m}
	2.25" x 1.70" x .121" "C" Section @ 2.64 #/ft. {57 mm x 43 mm x 3 mm "C" Section @ 3.93 kg/m}
	2.25" x 1.70" x .143" "H" Section @ 3.26 #/ft. {57 mm x 43 mm x 3.5 mm "H" Section @ 4.85 kg/m}
Corner & Pull Posts 3-6 ft. {1 - 2 m} high fence	2.375" O.D. Grade 1 Pipe @ 3.65 #/ft. {60 mm O.D. Grade 1 Pipe @ 5.43 kg/m}
	2.375" O.D. Grade 2 Pipe @ 3.12 #/ft. {60 mm O.D. Grade 2 Pipe @ 4.64 kg/m}
	2.5" x 2.5" Sq. Tubing @ 5.70 #/ft. {63 mm x 63 mm Sq. Tubing @ 8.48 kg/m}
Corner & Pull Posts 7-12 ft. {2.1 - 4 m} high fence	2.875" O.D. Grade 1 Pipe @ 5.79 #/ft. 73 mm O.D. Grade 1 Pipe @ 8.62 kg/m
	2.875" O.D. Grade 2 Pipe @ 4.64 #/ft. {73 mm O.D. Grade 2 Pipe @ 6.90 kg/m}
	3" x 3" Sq. Tubing @ 9.10 #/ft. {75 mm x 75 mm Sq. Tubing @ 13.54 kg/m}

Steel Fence Supports & Framing (continued)	
Gate Post for Gate Leaf Width 6 ft. {2 m} and less	2.875" O.D. Grade 1 Pipe @ 5.79 #/ft. {73 mm O.D. Grade 1 Pipe @ 8.62 kg/m}
	2.875" O.D. Grade 2 Pipe @ 4.64 #/ft. {73 mm O.D. Grade 2 Pipe @ 6.90 kg/m}
	2.5" x 2.5" Sq. Tubing @ 5.70 #/ft. {63 mm x 63 mm Sq. Tubing @ 8.48 kg/m}
Gate Post for Gate Leaf Width Over 6 ft. to 13 ft. {2 m to 4 m}	4.0" O.D. Grade 1 Pipe @ 9.11 #/ft. {102 mm O.D. Grade 1 Pipe @ 13.56 kg/m}
	4.0" O.D. Grade 2 Pipe @ 6.56 #/ft. {102 mm O.D. Grade 2 Pipe @ 9.76 kg/m}
Gate Post for Gate Leaf Width Over 13 ft. to 18 ft. {4 m to 6 m}	6.625" O.D. Pipe @ 18.97 #/ft. {168 mm O.D. Pipe @ 28.3 kg/m}
Gate Top & Middle Rail	1.660" O.D. Grade 1Pipe @ 2.27 #/ft. {42 mm O.D. Grade 1 Pipe @ 3.38 kg/m}
	1.660" O.D. Grade 2 Pipe @ 1.84 #/ft. {42 mm O.D. Grade 2 Pipe @ 2.74 kg/m}
Gate Frames	1.660" O.D. Pipe @ 2.27 #/ft, {42 mm O.D. Pipe @ 3.38 kg/m}
	1.660" O.D. Grade 2 Pipe @ 1.84 3/ft. {42 mm O.D. Grade 2 Pipe @ 2.74 kg/m}
	2" x 2" Sq. Tubing @ 3.85 #/ft. {50 mm x 50 mm Sq. Tubing @ 5.73 kg/m}

Tolerances for Steel Tubing and Shapes		
Shape and Size	Dimension	Weight {Mass}
Tubular, to and incl. 1 1/2" {38 mm}	+ 1/64", - 1/32" {+ 0.5 mm, - 1 mm}	± 5%
Tubular, larger than 1 1/2" {38 mm}	± 1%	± 5%
"C" Section, to and incl. 2.25"x 1.70" {57 mm x 43 mm}	± 0.0625 { ± 1.5 mm}	± 5%
"H" Section, 2.25"x 1.70" {57 mm x 43 mm} & larger	± 0.0937 { ± 2.5 mm}	± 5%

Minimum sizes and weights {masses} of posts, rails and framing for all aluminum elements shall be as follows:

Aluminum Fence Supports & Framing	
Line Post 3-6 ft. {1 - 2 m} high fence	2.375" O.D. Pipe @ 1.25 #/ft. {60 mm O.D. Pipe @ 1.86 kg/m}
	2.25" x 1.95" "H" Section @ 1.25 #/ft. {57 mm x 49 mm "H" Section @ 1.86 kg/m}
Line Post 7-12 ft. {2.1 - 4 m} high fence	2.875" O.D. Pipe @ 2.00 #/ft. {73 mm O.D. Pipe @ 2.98 kg/m}
	2.5" x 2.5" Sq. Tubing @ 1.25 #/ft. {63 mm x 63 mm Sq. Tubing @ 1.86 kg/m}
Corner & Pull Posts 3-6 ft. {1 - 2 m} high fence	3.0" O.D. Pipe @ 2.62 #/ft. {75 mm O.D. Pipe @ 3.90 kg/m}
Corner & Pull Posts 7-12 ft. {2.1 - 4 m} high fence	3.0" O.D. Pipe @ 3.00 #/ft. {75 mm O.D. Pipe @ 4.46 kg/m}
Gate Post for Gate Leaf Width 6 ft. {2 m} and less	3.0" O.D. Pipe @ 2.62 #/ft. {75 mm O.D. Pipe @ 3.90 kg/m}
	3.0" x 3.0" Sq. Tubing @ 2.0 #/ft. {75 mm x 75 mm Sq. Tubing @ 2.98 kg/m}

Aluminum Fence Supports & Framing (continued)	
Gate Post for Gate Leaf Width Over 6 ft. to 13 ft. {2 m to 4 m}	4.0" O.D. Pipe @ 3.0 #/ft. {100 mm O.D. Pipe @ 4.46 kg/m}
Gate Post for Gate Leaf Width Over 13 ft. to 18 ft. {4 m to 6 m}	6.625" O.D. Pipe @ 7.0 #/ft. {168 mm O.D. Pipe @ 10.42 kg/m}
Gate Top & Middle Rail	1.660" O.D. Pipe @ 0.786 #/ft. {42 mm O.D. Pipe @ 1.17 kg/m}
Gate Frames	1.660" O.D. Pipe @ 0.786 #/ft. 42 mm O.D. Pipe @ 1.17 kg/m
	1.5" x 1.5" Sq. Tubing @ 0.684 #/ft. {38 mm x 38 mm Sq. Tubing @ 1.02 kg/m}

(c) HARDWARE AND FITTINGS.

Hardware and fittings shall meet the requirements of AASHTO M 181 and be either metallic coated steel or Aluminum.

(d) MISCELLANEOUS WIRE.

Tension wire shall be metallic coated steel or aluminum as per AASHTO M 181. Wire used for tying shall be either No. 11 gage {3 mm} metallic coated steel or aluminum.

871.02 Woven Wire Fence.

Materials for woven wire fence unless specified otherwise on the plans shall conform to the following:

(a) FABRIC.

Fence fabric shall meet the requirements of ASTM A 116, Zinc Coated Steel Woven Wire Fabric, 1047-6-9, Grade 60, Class 3, or ASTM A 584, Aluminum Coated Steel Woven Wire Fabric, 1047-6-9.

When so designated on the plans for replacement of farm fencing, or fencing placed as a right-of-way consideration, etc., the Contractor may at his option use fabric as listed above or zinc coated steel wire, ASTM A 116, 1047-6-12 ½, Class 1 coating unless otherwise noted on the plans.

(b) SUPPORTS AND FRAMING.

Supports for woven wire fence shall be either wood or steel as noted on plan details and if not specified either may be used. Support requirements are as follows:

1. STEEL.

Steel supports shall meet the requirements of either AASHTO M 181, metallic coated steel posts, rails, or gate frames, Grade 1 or Grade 2, or posts meeting AASHTO M 281, 8 feet {2.4 m} long, galvanized to AASHTO M 111, with anchor plates.

When so designated on the plans for replacement of farm fencing, or fencing placed as a right-of-way consideration, etc., the Contractor may at his option use posts as listed above or painted steel posts meeting AASHTO M 281, unless otherwise noted on the plans.

Minimum sizes and weights of posts, braces and framing for all steel elements shall be as follows:

Steel Fence Supports & Framing	
Line Post	1.90" O.D. Grade 1 Pipe @ 2.72 #/ft. {48 mm O.D. Grade 1 Pipe @ 4.05 kg/m}
	1.90" O.D. Grade 2 Pipe @ 2.28 #/ft. {48 mm O.D. Grade 2 Pipe @ 3.39 kg/m}
	1.875" x 1.625" x .105" "C" Section @ 1.85 #/ft. {47 mm x 41 mm x 2 mm "C" Section @ 2.75 kg/m}
	Studded “T” Post with Spade Plate @ 11.3 #/post {Studded “T” Post with Spade Plate @ 5.1 kg/post}
Corner, End & Pull Posts	2.375" O.D. Grade 1 Pipe @ 3.65 #/ft. {60 mm O.D. Grade 1 Pipe @ 5.43 kg/m}
	2.375" O.D. Grade 2 Pipe @ 3.12 #/ft. {60 mm O.D. Grade 2 Pipe @ 4.64 kg/m}
Brace Posts	1.660" O.D. Grade 1 Pipe @ 2.27 #/ft. {42 mm O.D. Grade 1 Pipe @ 3.38 kg/m}
	1.660" O.D. Grade 2 Pipe @ 1.84 #/ft. {42 mm O.D. Grade 2 Pipe @ 2.74 kg/m}
Gate Post, Hinge Side	4.0" O.D. Grade 1 Pipe @ 9.11 #/ft. {102 mm O.D. Grade 1 Pipe @ 13.56 kg/m}
	4.0" O.D. Grade 2 Pipe @ 6.56 #/ft. {102 mm O.D. Grade 2 Pipe @ 9.76 kg/m}
Gate Post, Latch Side	2.375" O.D. Grade 1 Pipe @ 3.65 #/ft. {60 mm O.D. Grade 1 Pipe @ 5.43 kg/m}
	2.375" O.D. Grade 2 Pipe @ 3.12 #/ft. {60 mm O.D. Grade 2 Pipe @ 4.64 kg/m}
Gate Frames	1.90" O.D. Grade 1 Pipe @ 2.72 #/ft. {48 mm O.D. Grade 1 Pipe @ 4.05 kg/m}
	1.90" O.D. Grade 2 Pipe @ 2.28 #/ft. {48 mm O.D. Grade 2 Pipe @ 3.39 kg/m}

Tolerances in dimensions and weight shall be the same as specified in Subarticle 871.01(b). Weight tolerance for "T" posts shall be ± 5%.

2. WOOD.

Wood supports shall meet the requirements noted herein except as modified by details shown on the plans. Posts shall be sound and free from decay, other defects, or loose knots. Posts may be round or square sawed meeting the applicable requirements of Section 833. The slope of the grain in sawed posts shall not exceed one in ten. All posts shall be reasonably straight. Round posts shall be free of multiple crooks and in no case will posts, where the geometric center lies more than 1 inch {25 mm} outside of a straight line drawn from the center of the post at the butt end, less the burying depth to the center of the tip end, be acceptable. Square sawn posts shall not have crooks in excess of

1 inch in 5 feet {25 mm in 1.5 m}. The length and sizes of wood posts shall be as detailed on the plans within the following tolerances.

When so designated on the plans for replacement of farm fencing, the Contractor may at his option use posts as listed above or wood posts purchased from local dealers, unless otherwise noted on the plans.

a. Round Posts.

The furnished posts may include posts from the minimum diameter specified up to, but not to include, those 1 inch {25 mm} or larger than the minimum diameter designated. When tapered posts are furnished, the diameter at the butt end should not be more than one and one-half inches larger than the diameter measured at the tip end.

b. Sawed Posts.

The furnished posts shall be of the dimensions shown on the plans, plus 1/2 inch { 12 mm} or minus 1/4 inch {6 mm}.

c. Lengths.

The furnished posts shall not measure over one inch less than specified on the plans. Lengths greater than those shown on plans may be acceptable at the discretion of the Engineer, if not detrimental to the appearance of the fence.

All posts shall be pressure treated in accordance with the provisions of Section 833. All job cuts shall be painted with three coats of hot preservative composed of 60 percent Creosote Oil and 40 percent roofing pitch.

The Contractor shall have the choice of selecting one of the types of treated timber posts shown on the plans. Once a choice is made and erection begun, the Contractor will not be permitted to change to another type without the written permission of the Engineer.

(c) FASTENERS.

Fasteners for attaching fencing fabric and wire to wooden posts shall be staples formed from 0.148 inch (9 gage) {3.75 mm} diameter galvanized wire, approximately 1.5 inches {38 mm} long. Fasteners for attaching wire to steel posts shall be as designated in Subarticle 871.01(d).

871.03 Barbed Wire Fence.

Materials for Barbed Wire Fence shall be as follows, except as modified by plan details:

(a) BARBED WIRE.

Barbed wire shall meet the requirements of AASHTO M 280 with a Class 3 galvanized coating, or Aluminum coated steel barbed wire, Type I (Standard), ASTM A 585.

When so designated on the plans for replacement of farm fencing, or fencing placed as a right-of-way consideration, etc., the Contractor may at his option use wire as listed above or substitute wire meeting AASHTO M 280, with a Class 1 coating unless otherwise noted on the plans.

(b) SUPPORTS AND FRAMING.

Supports and framing shall meet the requirements of Item 871.02(b)2.

(c) FASTENERS.

Fasteners shall meet the requirements of Subarticle 871.02(c).

871.04 Gates.

Gates, where required, shall be swing gates as detailed or specified on the plans. The gate frames shall be the height of the top of the posts and covered with the same wire and fabric used on the fence. The frames shall be formed from tubular shapes meeting the requirements noted in Subarticle 871.01(b) complying with plan details, with all joints welded, or otherwise constructed, to form a rigid unit.

Gates for woven wire fencing of another acceptable design may be permitted provided that the gates are so constructed that they will not sag and the design has been approved in writing.

All gates shall be furnished complete with approved (tamper-proof) hinges, latches, auxiliary braces, and all other necessary fittings, including a heavy padlock with two keys and one master key for each gate furnished.

871.05 Concrete For Setting Posts.

Concrete for setting posts, etc., shall be Class A concrete complying with applicable portions of Section 501, with the following modifications.

The concrete may be dry batched at a central mixing plant and delivered to the project. Before the concrete is placed water shall be added. This may be done in small amounts as needed and mixed on a mixing board or mortar box. After water is added, the mix shall be used within sixty (60) minutes. Posts, braces and brace struts shall be held in proper position until the concrete hardens. The concrete for all corner, brace and line posts shall have cured for 72 hours before any strain is placed on them.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: June 14, 2012 Special Provision No. 12-0309

EFFECTIVE DATE: September 1, 2012

SUBJECT: Soil, Soil Aggregate, and Aggregate, Base and Subbases.

Alabama Standard Specifications, 2012 Edition, SECTION 301 shall be amended by replacing Articles 301.05 and 301.06 with the following:

SECTION 301
SOIL, SOIL AGGREGATE, AND AGGREGATE, BASE AND SUBBASES

301.05 Sampling and Testing.

(a) GENERAL.

All sampling and testing, except in-place density, will be performed on the complete in-place base or subbase layers after final mixing and spreading on the roadway has been completed except as noted in Subarticle 301.05(c) for cement treated base material. In-place density will be performed on the layers after final shaping and compacting has been completed.

Any necessary sample holes, etc., required to satisfactorily establish the acceptability of any base layer shall be repaired by the Contractor immediately with like material. The cost of such repairs is considered to be incidental to the work and shall be performed without additional compensation.

(b) SURFACE REQUIREMENTS.

The finished surface of each subbase or base layer shall not vary more than 1/2 of an inch {13 mm} in any 25 foot {8 meter} section from a taut string applied parallel to the surface and roadbed centerline at the following locations: 1 foot {300 mm} inside the edges of subbase or base, at the centerline, and at other points as designated. The finished surface shall not vary more than 3/8 of an inch {10 mm} from the required section measured with a template placed at right angles to the roadbed centerline. The template shall be of a rigid frame adjustable metal type, accurately set, and at least as long as the width of base layer being checked up to 24 feet {7.2 m}. Additional widths may be checked by the use of string and Engineer's level. The Contractor shall furnish template, string, and necessary personnel to handle same under the direction of the Engineer.

Where a Permeable Asphalt Treated Base (PATB) layer is to be placed (Pay Item 327-E), the finished base layer elevations shall not vary from design by more than 0.03 feet {10 mm} based on rod and level survey readings taken at a minimum of five locations across each lane (edge, outer wheel path, midlane, inner wheel path, and inside edge of lane) at longitudinal intervals not greater than 50 feet {15 m}. Surface irregularities shall not exceed 1/4 inch {7 mm} between two points longitudinally or transversely using a 10-foot {3 m} straightedge.

(c) GRADATION AND DENSITY.

Testing for compliance will be made as specified in Subarticle 301.05(a) except that a layer with a cement additive will require the pretesting of the blended components prior to the addition of the cement additive on the primary belt at the mixing plant.

The gradation of each layer will be checked at intervals as currently scheduled by the Department to determine compliance with the material specifications. Material falling outside of the specified bands of the general composition table shall be evaluated in accordance with the following: for each failing test, the price reduction will be five percent plus one percent for each percent for which the material failed to meet the required specifications. This applies to each sieve, percent clay, liquid limit (LL), or plasticity index (PI) requirement. These percentages are cumulative and apply to all material represented by that sample. If the resulting reduced unit price is less than 80% of the original unit price, the contractor will be given the option of modifying the in place material or

removing and replacing the material. In either case, the gradation of the material will be re-tested for compliance with the material specifications.

The density of each layer will be checked at intervals as currently scheduled by the Department to verify compliance with specification requirements. Density requirements are specified in Section 306.

(d) THICKNESS.

The thickness of each layer will be checked at intervals as currently scheduled by the Department and at closer intervals if necessary to determine the limits of any section found to be outside of the tolerance limits.

1. For a layer placed under a "square yard " {"square meter"} item, the compacted thickness of the layer shall not be more than 1/2 of an inch {13 mm} less nor 1 inch {25 mm} more than the thickness specified on the plans or directed. A thickness greater than the 1 inch {25 mm} tolerance may be accepted if uniform over a sufficient length to not materially affect the riding surface or reduce any required clearances and is within surface smoothness tolerances specified in Subarticle 301.05(b).

2. For a layer placed under a "cubic yard" {"cubic meter"} item, the compacted thickness of the layer shall not exceed eight percent of each layer, plus or minus, of the designated thickness. Excess thickness above the eight percent noted above may be permitted to remain in place provided the riding surface is not affected and any required clearances are maintained, The excess material above the eight percent tolerance allowed will be deducted from the pay quantities.

3. If the base layer contains cement, areas below required thickness or elevation shall be corrected by increasing the thickness of the next layer; or for the top layer, the surface may be brought to proper elevation and thickness with layers of bituminous plant mix of appropriate gradation where the pavement is to be a bituminous type. These leveling layers shall be placed ahead of a plant mix pavement layer or after a liquid surface treatment layer, if any. These layers shall be placed without additional compensation, or the Contractor may at his option remove and replace the deficient areas at his own expense. Low areas in the subgrade under concrete pavement shall be corrected as specified under Subarticle 450.03(c).

(e) WIDTH.

The widths shown on the plans, or directed, shall be the widths used for determining the area for pay purposes of square yard {square meter} layers. Widths in excess of the designated width may be acceptable if not detrimental to the appearance or design of the project; however, no deviation in excess of 0.3 feet {90 mm} less than the designated dimension for each side of a roadway will be acceptable.

301.06 Maintenance of the Work.

Each base layer shall be maintained as provided herein without extra compensation until it is covered by a succeeding layer or acceptance of the contract. The surface shall be kept free of ruts, ridges, holes, and substantially true to profile, grade, and cross-section. Each base layer must have the required density and moisture at the time it is covered by another layer. However, maintenance requirements for moisture will be waived for Crushed Aggregate Base after the layer has been properly compacted with proper moisture content. No layer of base shall be covered by another layer or primed until it has been approved by the Engineer.

Special attention is directed to the fact that lime or cement treated bases require special care to insure proper curing. Daily watering, rolling, or maintenance of curing material is considered an integral part of the work until the treated layer is covered by another layer or completion of the contract.

The Engineer may re-test a primed base layer where he suspects that it does not have the required density and moisture. All areas found deficient shall be corrected by the Contractor, at his expense, prior to the placement of the next overlying layer.

It shall be the Contractor's responsibility to protect the base from damage and to protect the prime from being picked up or damaged by traffic and to replace promptly any base or prime so damaged.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: June 26, 2012 Special Provision No. 12-0335

EFFECTIVE DATE: November 1, 2012

SUBJECT: Treated Wood.

Alabama Standard Specifications, 2012 Edition, shall be amended as follows:

SECTION 509
UNTREATED AND TREATED TIMBER

509.02 Materials.

This Article (509.02) shall be replaced by the following:

509.02 Materials.

All materials shall conform to the appropriate provisions of Division 800, Materials. Specific reference is made to Section 833, Lumber and Timber, Untreated and Treated.

SECTION 816
TIMBER PRESERVATIVES

This Section shall be deleted from the Standard Specifications.

SECTION 833
LUMBER AND TIMBER - UNTREATED AND TREATED

This Section shall be replaced by the following:

SECTION 833
LUMBER AND TIMBER - UNTREATED AND TREATED

833.01 Structural Lumber and Timber.

Structural lumber and timber shall be Southern Yellow Pine, unless otherwise noted on the plans or in the proposal, meeting the requirements of AASHTO M 168 "Standard Specification for Wood Products". The grade of structural wood shall be as shown on the plans.

833.02 Preservative Treatment.

Preservatives for treated wood shall meet the requirements of AASHTO M 133 "Preservatives and Pressure Treatment Processes for Timber".

SECTION 864
GUARDRAIL AND BARRIER RAIL MATERIALS

This Section shall be replaced by the following:

SECTION 864
GUARDRAIL AND BARRIER RAIL MATERIALS

864.01 Rail Elements.

(a) BEAM PLATE GUARDRAIL.

1. STEEL.

Steel rail elements and accessories shall conform to the requirements given in AASHTO M 180.

Zinc coating shall be Type II, 4.00 ounces per square foot {1220 g/m²}, minimum triple spot test.

Chemical composition for Type 4 beams shall conform to one of the following based on ladle analysis.

CHEMICAL COMPOSITION TYPE 4 BEAMS									
Blend	C	Mn	P	S	Si	Cu	Cr	Ni	Zr
No. 1	0-12 Max.	0.20 to 0.50	0.07 to 0.15	0.05 Max.	0.25 to 0.75	0.25 to 0.55	0.30 to 1.25	0.65 Max.	- - -
No. 2	Shall conform to the requirements of ASTM A 606 for Type 4, high strength - low alloy - hot rolled sheet or strip. Members or accessories for beams meeting ASTM A 606 which require welding shall meet the requirements of ASTM A 588 for Grade A or B Material.								

In addition, for Type 4 beams after fabrication, all steel shall be blast cleaned or pickled to remove all mill scale. Blast cleaning shall conform to Steel Structures Painting Council Surface Preparation Specification No. 10 Near-White Metal Blast Cleaning (SSPC-SP10). All pickling acid shall be thoroughly rinsed off. All fabricated steel parts shall be handled with care to avoid gouges, scratches, and dents. The steel shall be kept clean of all foreign material, such as paint, grease, oil, chalk marks, crayon marks, concrete spatter, or other deleterious substances. Natural oxidation of the steel will not be considered foreign material. Storage in transit, in open cars and trucks, for an extended period will not be permitted. Steel parts stored outside in yards or at job-sites shall be positioned to allow free drainage and air circulation.

2. ALUMINUM.

Aluminum alloy rain element shall be aluminum alloy 2023 T-3 conforming to the requirements of ASTM B 209. The rail shall be of such thickness as will meet strength requirements of AASHTO M 180 for the strength class designated; however, in no case will the tensile strength of the full size beam (including a splice at the center) be less than 80,000 pounds {355 kN} for Class A or 100,000 pounds {445 kN} for Class B. The shape shall meet AASHTO M 180 requirements.

(b) BARRIER RAIL.

The barrier rail elements, including all accessories, shall conform to the material requirements shown on the plans for the type material of which the barrier rail is to be constructed.

864.02 Posts.

(a) TREATED TIMBER POSTS.

Timber posts shall be sawed to within plus or minus 1 inch {25 mm} of the length and plus or minus 3/8 of an inch {10 mm} of the full end dimensions shown on the plans. Timber block-outs shall be sawed to within 1/4 of an inch {6 mm} of the length and plus or minus 3/8 of an inch {10 mm} of the

full end dimensions shown on the plans. Holes shall be drilled slightly smaller than the designated bolt size so as to provide a driving fit.

All timber shall be Southern Yellow pine, Grade No. 1SR or better, in accordance with the Southern Yellow Pine Inspection Bureau's grading system. Post and blockout treatment shall be in accordance with AWPA-U-1 as applicable to guardrail posts. The preservative shall be one recommended under AWPA-U-1 except that within a contract only one type will be permitted unless otherwise permitted in writing by the Engineer. All timber posts and blockouts should be fabricated and holes drilled before treatment, but where field modifications of necessity are made after treatment, the new surfaces shall be given a preservative treatment in accordance with the provisions of AWPA-M-4 using a method approved by the Engineer.

(b) METAL POSTS.

Steel posts, including block-outs for guardrail, shall comply with the requirements of ASTM A 36, modified to waive the maximum tensile strength. All material shall be new and of the size, shape, etc. noted by the plan details, hot-dip galvanized after fabrication.

Metal posts for barrier rails shall be steel meeting the requirements noted in paragraph one above or when aluminum barrier rail is used, aluminum posts conforming to the requirements of ASTM B 221, Alloy 6351-T4 or 6061-T4 of the size, shape, etc. noted by plan details.

864.03 Anchors.

Concrete for anchors shall be constructed of Class "A" Concrete in conformity with the detailed requirements of Section 501 with attention directed to Item 501.03(k)2. All surfaces shall be given a Class 1 finish with all exposed surface given a Class 2 surface finish.

Metal parts used in anchors shall comply with the appropriate requirements for metals noted elsewhere in this Section or other portions of these Specifications.

Wire rope (cable) for anchors shall be 3/4 inch {19 mm} nominal diameter meeting the requirements of AASHTO M 30, Type II, having a Class A galvanization coating.

864.04 Galvanization.

All metal required by the plans or specifications to be galvanized shall be galvanized after fabrication in accordance with AASHTO M 111 amended to cover the weight {mass} of the zinc coating specified in Article 864.01. Shop fabrication shall be considered to include all work necessary to prepare the unit for immediate and complete installation. No punching, cutting, burning, or welding will be permitted in the field except for special details in exceptional cases as may be directed by the Engineer; however, in such cases, holes shall be drilled and cutting done by sawing and the area treated as provided in Subarticle 630.03(c).

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: July 12, 2012 Special Provision No. 12-0351

EFFECTIVE DATE: November 1, 2012

SUBJECT: Steel Reinforcement.

Alabama Standard Specifications, 2012 Edition, SECTION 502 shall be amended as follows:

SECTION 502
STEEL REINFORCEMENT

502.03 Construction Requirements.

(d) SPLICING AND LAPPING STEEL REINFORCEMENT.

4. BUTT SPLICING.

This Item [502.03(d)4] shall be replaced by the following:

4. BUTT SPLICING.

Reinforcing bars shall be butt spliced only when shown on the plans. The butt splice shall be a mechanical coupling splice.

The mechanical coupling shall be made with a coupler that can develop, in tension, at least 125 percent of the specified yield strength (fy) of the bar. The Contractor shall prepare three test splices using the proposed method of splicing and reinforcing bars obtained from the supplier of the reinforcing steel. These test splices and two unspliced bars will be tested by the Alabama Department of Transportation's Bureau of Materials and Tests. The tension tests will be performed on full cross section specimens in accordance with ASTM E 8 {E 8M}, using a gage length that spans the extremities of the connector. Complete details of the mechanical splice and the methods and equipment proposed for use in making the splice shall be submitted to the Department for approval.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: August 12, 2014 Special Provision No. 12-0352(4)

EFFECTIVE DATE: April 1, 2015

SUBJECT: Structural Steel, Fasteners, and Miscellaneous Metals.

Alabama Standard Specifications, 2012 Edition, SECTION 508 and SECTION 836 shall be amended as follows:

SECTION 508
STRUCTURAL STEEL AND MISCELLANEOUS METALS

508.02 Materials.

Subarticle 508.02(g) shall be replaced with the following:

(g) Materials for bridge deck drainage systems shall conform to the requirements shown on the plans. Galvanizing, if required, shall conform to ASTM A 120 for pipe, AASHTO M 111 for forgings, shapes, etc., AASHTO M 232 for miscellaneous hardware and anchor bolt assemblies (anchor bolts, nuts, and washers), and ASTM B 695 Class 50 for bolt assemblies (bolts, nuts, and washers).

508.03 Construction Requirements.

(a) GENERAL.

The fourth paragraph of Subarticle 508.03(a) shall be replaced with the following:

All foreign material which adheres to the steel after fabrication, including tight mill scale, shall be removed without additional compensation. Tight mill scale on the top of the top flanges of girders and beams may remain except in the locations where studs are to be attached. The surface of the steel shall be cleaned to bright metal just prior to attaching studs.

(b) SHOP FABRICATION.

Subarticle 508.03(b) shall be replaced with the following:

(b) SHOP FABRICATION.

The requirements for shop fabrication are given in Section 836.

Within 30 days after the award of the contract, the Contractor shall submit the following items to the Bridge Engineer:

- Name, address and location of the plant where the structural steel will be fabricated.
- A completed ALDOT Bridge Bureau Form BBF-11. The date that fabrication will begin shall be shown on the form.
- A description of the type of coating system that will be applied.
- Construction survey data if this is shown to be required on the plans.

The review of the shop drawings, and the time allowed for the review given in Section 105, will not begin until all of the required items have been received by the Bridge Engineer. Evidence of the fabricator's qualifications and experience shall be furnished if requested by the Bridge Engineer.

No material shall be fabricated before the Department has been notified where the fabrication order has been placed. The Fabricator is responsible for notifying the Bridge Engineer of any outsourced work to be done by another facility, the name and address of the outside source, and the proposed schedule.

Shops fabricating main structural steel members (as defined by Subarticle 836.01(b)) and/or items paid for under Pay Item 508-B (with the exception of navigational light brackets, inspection

catwalks, platforms and ladders) shall be certified by the American Institute of Steel Construction. These facilities shall conform to the AISC Certification Program for Steel Bridge Fabricators for either Intermediate Bridge or Advanced Bridge depending on the complexity of the structure by design for all steel bridges. For fracture critical work, shops shall be certified for either Intermediate Bridge or Advanced Bridge with the fracture critical endorsement.

Shops fabricating expansion dams (finger joints, etc.) for interior and exterior bridge joints shall be certified by the AISC Certification Program for Bridge and Highway Metal Component Manufacturers or by the Intermediate AISC Bridge Certification program for steel bridge fabrication.

(d) ERECTION.

6. HIGH STRENGTH BOLTING.

d. Installation.

In Subitem 508.03(d) 6 d, Table 1 shall be replaced by the following:

TABLE 1	
NOMINAL BOLT DIAMETER & THREAD PITCH	REQUIRED MINIMUM BOLT TENSION
ASTM A 325 high strength bolts only.	
1/2 inch	12,050 pounds
5/8 inch	19,200 pounds
3/4 inch	28,400 pounds
7/8 inch	39,250 pounds
1 inch	51,500 pounds
1 – 1/8 inches	56,450 pounds
1 - 1/4 inches	71,700 pounds
1 - 3/8 inches	85,450 pounds
1 - 1/2 inches	104,000 pounds
ASTM A 325M high strength bolts only.	
M16 x 2	91.0 kN
M20 x 2.5	142.1 kN
M22 x 2.5	175.7 kN
M24 x 3	205.1 kN
M27 x 3	266.7 kN
M30 x 3.5	327.2 kN
M36 x 4	474.6 kN

8. BOLTED CONNECTIONS.

This Item [508.03(d) 8] shall be replaced with the following:

8. BOLTED CONNECTIONS.

The bolt length used shall be such that the end of the bolt is flush with but does not extend more than ¼" beyond the outer face of the nut when properly installed. In bolted connections, other than high strength steel bolts, the bolts shall be drawn up tight and the threads burred at the face of the nut with a pointed tool.

9. WELDED SHEAR CONNECTOR STUDS.

This Item [508.03(d) 9] shall be replaced with the following:

9. WELDED SHEAR CONNECTOR STUDS.

The required locations of the studs shall be marked at the fabrication shop. The fabricator shall center punch the steel at the center of all stud locations to provide a durable marking. A highly visible indelible paint marker shall be applied over the center punch points prior to shipment of girders to the project.

The Contractor shall notify the Engineer of the date that installation of the studs will begin in the field. This notification shall be given a minimum of five calendar days prior to the date of installation. The Engineer will notify the Bridge Engineer of the installation date so that the inspection of the installation can be made by a representative of the Bridge Engineer. Studs shall not be installed until the Engineer is given the opportunity to inspect the preparation of base metal, layout of the location of the studs and the studs and shields/ferrules to be used in the operations. The fusion areas on the top flange to which studs are to be welded, as well as the fusion area of the studs, shall be cleaned to bright metal before welding. Once the stud welding operations are underway one stud out of every tenth row of studs on each girder line will require bend testing to 30° from its original axis for assurance that the studs are being applied properly. Any stud that exhibits a failure will be replaced with a new stud after the location of the failed stud is repaired by grinding to sound metal.

Studs shall be one of those shown in List II-4 of the ALDOT manual "MATERIALS, SOURCES, AND OTHER DEVICES WITH SPECIAL ACCEPTANCE REQUIREMENTS".

Studs shall be attached in accordance with the requirements given in ANSI/AASHTO/AWS D1.5/D1.5M 2008 Bridge Welding Code and Article 836.46.

508.04 Method of Measurement.

(a) ITEMS NO. 508-A, AND 508-D.

This Subarticle [508.04(a)] shall be replaced with the following:

(a) ITEMS NO. 508-A, AND 508-D.

The theoretical poundage {mass} of accepted metal in the per pound {kilogram} price items, complete in place, will be computed in conformity with the following:

1. The weight {mass} of steel shall be assumed at 0.2833 pounds per cubic inch {7850 kg/m^3}. The weight {mass} of cast iron shall be assumed at 0.26 pounds per cubic inch {7200 kg/m^3}. The weight {mass} of bronze shall be assumed at 0.315 pounds per cubic inch {8150 kg/m^3}.
2. The weights {masses} of rolled shapes in the completed structure, shall be calculated on the basis of their theoretical weights {masses} and dimensions given in the handbooks of the mills rolling the various sections and shapes. The weights {masses} of steel plates shall be computed on the basis of their detailed dimensions as shown on the approved shop drawings. Weights shown on the approved shop drawings shall not be used for payment purposes.
3. The weight {mass} of castings shall be calculated from the detail dimensions shown on the approved shop drawings, with an addition of 10 percent for fillets, overrun and finishing.
4. Only the weight {mass} of materials used in the completed, permanent work will be measured for payment.
5. No allowance in weight {mass} will be made for shop or field paint.
6. For the purpose of measurement and payment, incidentals such as bearing plates, pedestals, and other minor metal parts shall, unless otherwise provided, be considered as structural steel even though made of other materials except the bronze bearing plates and the PTFE coated bearing plates will be paid for under Item 508-C.
7. For purposes of measurement and payment when payment is on a per pound {kilogram} basis, required welded shear connection studs will be included in the quantity of structural steel.

508.05 Basis of Payment.

(b) ITEM NO. 508-B.

Subarticle 508.05(b) shall be replaced with the following:

(b) ITEM NO. 508-B.

Accepted metal superstructure span units will be paid for at the contract unit price bid for each respective unit, complete in place, which shall be payment in full for furnishing, fabricating, transporting, erecting and painting all materials and for all labor, equipment, tools, falsework, cleaning up and incidentals necessary to complete the work.

Unless noted otherwise on the plans, this item shall include the following:

- all structural steel in the superstructure unit
- structural steel in the bearing devices, except the PTFE coated bearing plates
- expansion dams (finger joints , etc.) for interior and exterior open bridge joints

Where separate pay items are not provided, this item shall also include furnishing, fabrication, painting or galvanization, transporting and installing ladders, platforms, catwalks, and navigational lighting brackets.

Joint armor plates, channels, angles, anchor bolts, etc. for sealed interior and exterior bridge joint design shall be as specified in Section 522 and are not as a part of this item. This item does not include reinforcing steel and concrete.

Structural steel bearing plates for Type 3, 4 and 5 elastomeric bearings shall be included in the payment for elastomeric bearings under Pay Item 511-A and are not a part of this item.

SECTION 836
STRUCTURAL STEEL, FASTENERS AND MISCELLANEOUS METALS

836.01 General.

(a) MARKING OF STEELS.

Subarticle 836.01(a) shall be replaced with the following:

(a) MARKING OF STEELS.

Steels, when received from the mill shall be identified in accordance with ASTM A 6 {A 6M}. On steel piling the heat number and section size shall be legibly marked on each piece by stamp, paint, tag, sticker or other industry accepted method. Any piece that cannot be properly identified at time of use will be rejected until such time documentation or approved testing of the items in question can prove conformance to the requirements.

Certified mill test reports or certified reports of tests made by other agencies which are recognized by the ALDOT, shall be furnished for each heat of steel verifying that the material meets the requirements of the type and grade specified. The Department reserves the right to make its own test of any material, and the material may be rejected if these tests prove the material does not meet the requirements.

For identification purposes, the fabricator shall utilize low stress stencils to dye stamp the mill heat numbers of the flanges and webs in the webs of welded members and in the webs of rolled members. The heat numbers shall be legible, located adjacent to piece marks, and placed centered between the top and bottom flange in the first panel to the left end and near side of the member.

All steel which is required to have a yield point greater than 36,000 psi {250 MPa} shall, at all times in the fabricator's plant, be color marked to identify its AASHTO, ASTM, or special specification.

(b) GENERAL REQUIREMENTS.

Item 836.01(b)1 shall be replaced with the following:

1. Structural steel shall conform to the requirements of AASHTO M 270 Grade 36 {Grade 250} unless otherwise noted hereinafter in this Section or shown on the plans.

AASHTO material specifications shall govern in lieu of ASTM material specifications where an AASHTO equivalent specification exists for all references within any referenced specification.

With the approval of the Engineer, materials (other than web and flange material and web splice and flange splice material) for members may be taken from stock, provided the fabricator provides all documentation which shows the material conforms to the required specifications, prior to use of such material.

The term "main member", as used hereinafter in this section or shown on the contract plans, is defined as any member requiring Charpy V-notch (CVN) testing.

Structural steel members requiring Charpy V-notch testing shall include, but not be limited to, the following:

- All rolled beams in the superstructure and steel pier caps.
- All flanges and webs of steel plate girders and steel pier caps.
- All cover plates for beams and girders.
- All flange and web splice plates for beams, girders, and floorbeams or stringer beams.
- All connection plates welded to rolled beams, steel plate girders, and steel pier caps.
- All diaphragms or cross frames for curved beams and girders, including their gusset and connection plates.
- All stringer beams (floorbeams) and any connection plates welded thereto.
- All floorbeam trusses (cross frames) which support stringer beams (floorbeams), including their gusset and connection plates.

The material supplied shall meet the longitudinal Charpy V-notch test noted below. Sampling and testing shall be in accordance with AASHTO T 243 with the (H) frequency of heat testing used. All members requiring CVN testing shall have heat numbers legibly marked during fabrication.

Steel Grade	Thickness	Test Requirements	
M 270 Grade 36	Up to 4"	15 ft. lb. @ 70°F.	(Min. Ser. Temp. 0°F. and above)
M 270 Grade 50 & Grade 50W	Up to 4" Mech. Fastened Up to 2" Welded Over 2" to 4" Welded	15 ft. lb. @ 40°F. 15 ft. lb. @ 40°F. 20 ft. lb. @ 40°F.	(Min. Ser. Temp. -1°F. to -30°F.)
{250}	{Up to 102 mm}	{20 J @ 21 °C}	{Min. Ser. Temp. -18 °C and above}
{345 & 345W}	{Up to 102 mm Mech. Fastened} {Up to 51 mm Welded} {Over 51 mm to 102 mm Welded}	{20 J @ 4 °C} {20 J @ 4 °C} {27 J @ 4 °C}	{Min. Ser. Temp. -18 °C to -34°C}
If the yield point of the material exceeds 65 ksi {450 MPa}, the temperature of the CVN value for acceptability shall be reduced by 15 °F {8 °C} for each increment of 10 ksi {70 MPa} above 65 ksi {450 MPa}.			

When designated on the plans, the Contractor (Fabricator) shall furnish one main load carrying member 18 inches {460 mm} overlength in order to provide an 18 inch {460 mm} sample for Departmental testing.

Unless otherwise shown on the plans, steel plates for main members shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

5. High strength and alloy steel shall be in accordance with the following.

Subitem 836.01(b)5b shall be replaced with the following:

b. High strength structural steel for bolted and welded construction shall conform to AASHTO M 270 of the Grade as shown on the contract plans (Grade 50 or Grade 50W). AASHTO M 270 Grade 50 {Grade 345} steel shall be limited to structural shapes in groups 1, 2 and 3 in ASTM A 6 {A 6M} and to plates and bars in thicknesses through 4 inches {102 mm}. Plates and bars over 3/4 inch {19 mm} through 4 inches {102 mm} in thickness shall be "killed-fine grain practice."

836.16 Notice and Facilities For Inspection.

Article 836.16 shall be replaced with the following:

836.16 Notice And Facilities For Inspection.

After the Bridge Engineer has received the fabricator notification required by 508.03(b) and as the fabrication begins, copies of the mill test reports and fabricators material information, for materials which require CVN testing, shall be supplied to the Bridge Engineer or his representative prior to completion and acceptance of fabrication.

No materials or members will be accepted by the Bridge Engineer's representative on structural steel until the Department's form BBF-1 (available from the Bridge Engineer) and the supporting mill test reports for the materials have been furnished and approved by the Department. A complete package of this information shall be given to the ALDOT representative at the fabricator's plant, to be followed by a submittal to the ALDOT Materials & Tests' Certification office. The BBF-1 form shall be signed by a company official and shall be notarized. The acceptance of members as fabricated may be noted by the affixing of the ALDOT stamp on the member by the Bridge Engineer's representative.

The Contractor shall provide adequate, suitable facilities and equipment when required for the inspection of materials and workmanship in the fabrication shop. This office shall be located conveniently near the fabricating plant or work site, shall be private and not shared with the fabricator or any other agency, and shall be equipped so that it may be locked. It shall be roofed, insulated and weather tight with suitable operational air-conditioning and heating facilities for year round use. The furniture shall include chairs, a desk, filing cabinet and a table. A telephone and telephone line shall also be furnished.

Inspectors shall be allowed free access to the necessary parts of the work. Refer to articles 105.09, 105.10, and 105.11 concerning the duties of the Inspector(s) and inspection of work.

Unless otherwise provided, the Contractor shall furnish, without extra compensation, test specimens as provided herein.

Fabrication shops shall have a master tape calibrated by the National Institute of Standards and Technology. All tapes used in fabrication measurements shall be calibrated with the master tape before being used on the project. Any master tape found damaged or with a certification over two years old shall be replaced or recalibrated.

The quality control program for any fabrication work performed will be subject to the review of the Bridge Engineer. A written current copy of the fabricator's Quality Control Manual and current copies of all nondestructive testing and Quality Control Inspection personnel certifications associated with fabrication work shall be on file with the Bridge Engineer prior to the beginning of work.

Any bridge fabrication facility that is required to have an AISC Certification of Intermediate Bridge or Advanced Bridge shall have a Certified Welding Inspector (CWI) employed by, or retained by, and preferably working with the fabricator's quality control office. A CWI shall be present on all shifts and shall be available at any location that fabrication and welding are to take place.

Quality Control guidelines and requirements shall conform to ANSI/AASHTO/AWS D1.5 Section 6. If the Bridge Engineer finds the fabricator's quality control office is not providing sufficient inspection on the work in progress, he may suspend all or any portion of the work in progress (reference is made to Article 105.01 and Subarticle 108.07(a)). Work may resume only after necessary adjustments to the Quality Control Program are instituted which will assure conformance to the contract requirements.

All nondestructive testing personnel shall meet the requirements set forth in the "ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel (ANSI/ASNT CP-105-2011)".

836.17 Handling, Storage And Transporting Of Materials.

Article [836.17] shall be replaced with the following:

836.17 Handling, Storage And Transporting Of Materials.

The loading, unloading, handling and storing of materials shall be so conducted that the metal will not be injured or damaged. Structural material delivered at the bridge shop receiving yard shall be stored above the surface of the ground upon platforms, skids, or other supports and shall be protected from corrosion. It shall be kept free from accumulations of dirt, grease or foreign matter.

During and after fabrication, proper lifting equipment with the capacity to handle members carefully at all times so that no member or part thereof will be bent, excessively stressed, deformed or otherwise damaged shall be used. Handling of members shall require the use of suitable clamps, plate hooks or other suitable devices. Chains or chokers will not be allowed without the use of a protective shield between the chain and the member. Members longer than 50 feet {15 m} shall utilize a two or more point pickup method. Members shall be transported in such a manner that they will not be excessively stressed, deformed or otherwise damaged. Unless otherwise authorized for exceptionally deep girders, girders and beams shall be stored and transported in a "workway position" as used in the structure with appropriate shoring and blocking methods suitable to the Engineer. Chain tie downs shall be provided with protection shields. Multiple stacking of beams and girders may only be done in a manner acceptable to the Engineer. Any suspected damage from handling, storage or hauling shall be cause for the Engineer to order verification of design camber and/or repair of the beam or girder.

All structural materials shall be examined by shop personnel and/or quality control, at the earliest possible time for evidence of any defects. If pitting or other defects are plainly visible during early stages of fabrication prior to any required surface preparation (sand or shot blasting), evaluation shall be required. Information regarding actual material thickness, amount of area affected and end use of material being evaluated will be submitted to the Engineer for acceptability. Any required conditioning will be allowed only when in compliance with ASTM A 6 {A 6M}.

The above shall also apply to pitting of fabricated material stored prior to shipment and to material delivered to the bridge site. Attention is called to Subarticle 106.05(b).

Preparation and shipment of fabricated pieces shall conform to the following:

Loose Members.

1. Parts not completely assembled in the shop shall be secured, insofar as practicable, to prevent damage in shipping or handling.

2. Projecting parts likely to be damaged during shipment shall be blocked with wood or otherwise protected.

Packages.

1. Pins, small parts and small packages of bolts, rivets, washers, and nuts shall be shipped in boxes, crates, kegs, or barrels. A list and description of the contained material shall be plainly marked on the outside of each shipped container.

2. Anchor bolts, washers, and other anchorage or grillage materials, shall be shipped in time to suit the requirements of the masonry construction.

Loading diagrams shall be provided to the Bridge Engineer for his review when Structural Steel items are to shipped by barge or railcar.

836.19 Workmanship And Finish.

(a) GENERAL.

This Subarticle [836.19(a)] shall be replaced with the following:

(a) GENERAL.

Workmanship and finish shall be first class in every respect. Materials at the shop shall be kept clean and protected from the weather insofar as practical. Shearing, burning, chipping and grinding shall be neatly and accurately done in a workmanlike manner.

Damage incurred to members or the surfaces of members for any reason shall be cause for the Engineer to order the damage repaired or to reject the member in accordance with the following:

1. Except as noted in paragraph 2 below, damage to surfaces of plates that does not reduce the plate thickness below the permissible minimum thickness allowed by ASTM A 6 {A 6M}or the thickness of structural shapes in excess of 1/32 inch {0.8 mm} for material less than 3/8 inch {9.5 mm} in thickness, 1/16 inch {3.2 mm} for materials 3/8 inch to 2 inches {9.5 mm to 50 mm} inclusive in thickness or 1/8 {3.2 mm} in for material over 2 inches {50 mm} thick are considered repairable. Damage in excess of the limits noted will be evaluated by the Engineer as to whether to reject or allow repair of member.

2. Surface indentation of members caused by lifting devices shall be evaluated by the Bridge Engineer's representative to determine if the damage is repairable and if repairable, the repairs necessary for acceptance. Continued use of lifting devices that cause damage, especially that which

reduces the specified thickness by more than 1/16 inch {1.6 mm}, will be cause for the rejection of all such members so damaged.

3. In general, when allowed, repair work will consist of welding and/or grinding of the surfaces; however, when evaluation of base metal defects becomes necessary, such evaluation shall be done in the presence of the Bridge Engineer's representative. The type of evaluation shall be determined by the fabricators quality control personnel subject to the approval of the Bridge Engineer's Representative. After evaluation of such defects and where welding is necessary on rolled surfaces, stringer beads shall be placed parallel to the direction of stress. All welding shall be performed by competent welders using low hydrogen welding electrodes or consumables which are listed in the ALDOT "Materials, Sources, and Devices with Special Acceptance Requirements" manual. The Engineer shall be the sole judge as to the acceptability of the repair work, and unacceptable work shall be cause for rejection of a member.

4. A form of buffer and/or shield shall be utilized during fitting operations to protect base materials from damage caused by fitting tools or devices. If evidence of base metal damage appears due to misuse of such devices, the material may be deemed unacceptable.

(c) CAMBER OR CURVING OF BEAMS AND GIRDERS.

Subarticle 836.19(c) shall be replaced with the following:

(c) CAMBER OR CURVING OF BEAMS AND GIRDERS.

Camber in rolled beams shall be accomplished by the heat up-set method utilizing the lowest possible temperature not to exceed 1100 °F {590 °C}, as evidenced by infrared thermometers or heat crayons . The application of heat shall be carefully supervised using a method acceptable to the Engineer.

Camber for built-up girders shall be accomplished by cutting the web to the prescribed camber with suitable allowance for shrinkage due to cutting and welding. However, moderate variation from the prescribed camber tolerance may be corrected by a carefully supervised application of heat not to exceed 1100 °F {590 °C}. as evidenced by infrared thermometers or heat crayons.

Horizontal curving of rolled beams shall be accomplished by the heat up-set method which will require a written procedure approved by the Engineer. Said procedure shall utilize the lowest temperature possible but not in excess of 1100 °F {590 °C} as evidenced by infrared thermometers or heat crayons.

Horizontal curving of built-up girders shall be accomplished by cutting flange plates to the radii shown by the plan details from wider plates, unless the heat up-set method is allowed by the plans or proposal. When the heat up-set method is allowed, such will require a written procedure approved by the Engineer. Said procedure shall utilize minimum temperatures not to exceed 1100°F {590 °C} as evidenced by infrared thermometers or heat crayons.

After heating of metals as noted, the metal shall not be artificially cooled until after naturally cooling to 600°F {315 °C}. or less. The method of artificial cooling must be acceptable to the Engineer. Water or water spray misting shall not be used as a means of artificial cooling. Any material that is heated above the temperature limit noted will be rejected until tests and investigations reveal the material is suitable for use. The Fabricator shall be solely responsible for providing any test data or other information deemed necessary by the Engineer to evaluate the acceptability of the material at no cost to the Department.

The fabricator's Quality Control Inspector shall furnish verification certificates of the actual measurements of the camber, overall length and horizontal sweep placed in each beam or girder. Actual measurements shall be verified and recorded by the Fabricator's Quality Control Inspector.

(d) STRAIGHTNESS, CAMBER AND SWEEP IN WELDED BEAMS AND GIRDERS.

This Subarticle [836.19(d)] shall be replaced with the following:

(d) STRAIGHTNESS, CAMBER AND SWEEP IN WELDED BEAMS AND GIRDERS.

1. STRAIGHTNESS OF WELDED BEAMS AND GIRDERS (NO REQUIRED CAMBER OR SWEEP).

If requirements for camber and sweep are not given in the contract, welded beams and girders shall be straight within a plus and minus tolerance for straightness. The straightness tolerance shall be +/- 1/8 inches per foot times the number of feet from the nearest end of the beam or girder

divided by 10 {+/- 3 mm times the number of millimeters from the nearest end of the beam or girder divided by 3000}.

2. TOLERANCE FOR THE CAMBER OF WELDED BEAMS AND GIRDERS.

The camber of welded beams and girders shall be within a plus and minus tolerance measured in inches. The tolerance shall be + 1/8 inches and - 0 inches per foot times the number of feet from the nearest end of the beam or girder divided by 10 {+ 3 mm and - 0 mm times the number of millimeters from the nearest end of the beam or girder divided by 3000}.

3. TOLERANCE FOR THE SWEEP OF WELDED BEAMS AND GIRDERS.

The sweep of horizontally welded beams and girders shall be within a plus and minus tolerance measured in inches. The tolerance shall be +/- 1/8 inches per foot times the number of feet from the nearest end of the beam or girder divided by 10 {+/- 3 mm times the number of millimeters from the nearest end of the beam or girder divided by 3000}.

The horizontal alignment of the sweep of the top and bottom flanges at any point along welded beam or girder shall be within 3/8 inch {10 mm).

(e) SURFACE PROFILE AT THE CENTERLINE OF STRUCTURAL STEEL FINGER JOINTS.

This Subarticle [836.19(e)] shall be replaced with the following:

(e) SURFACE PROFILE AT THE CENTERLINE OF STRUCTURAL STEEL FINGER JOINTS.

The profile of the surface of a structural steel finger joint, measured along the centerline of the finger plate sections of the finger joint (transverse to the centerline of the roadway) shall be within a plus and minus tolerance. The tolerance shall be + 1/16 inch and - 0 inches per foot times the number of feet from the nearest end of the joint divided by 10 {+ 2 mm and - 0 mm times the number of millimeters from the nearest end of the joint divided by 3000}. When all fabrication is completed the flat surfaces of each finger plate section shall be straight edged for flatness and any area found exceeding 1/8 inch in 10 feet {3 mm in 3 m} shall be marked and corrected by approved methods. A 10 foot {3 m} straight-edge shall be used and lapped at least 5 feet {1.5 m} over the prior 10 foot {3 m} check.

836.20 Thermal Cutting.

Article 836.20 shall be modified by replacing the third paragraph with the following:

Other methods of cutting steel may be acceptable provided the method will produce cut surfaces within the required tolerances for thermal cut surfaces.

836.27 Shop Assembling.

(b) ASSEMBLING.

Item 836.27(b)4 shall be replaced with the following:

4. Abutting joints in compression members, where so specified on the drawings, shall be faced and brought to an even bearing. No milling shall be done until members are completely shop assembled, unless otherwise provided on the plans. Where joints are not faced (field splices in continuous steel girder lines), the opening shall not exceed 3/8 inch {9.5 mm}.

836.29 Match-Marking.

Article 836.29 shall be replaced with the following:

836.29 Match-Marking.

Connecting parts assembled in the shop for the purpose of reaming or drilling holes in field connections shall be match-marked with low stress stencils using figures and letters at least 3/8 inch {10 mm} high, and a diagram showing such marks shall be shown on approved shop drawings. Reamed parts shall not be interchanged.

836.33 High Strength Fasteners.

This Article [836.33] shall be replaced with the following:

836.33 High Strength Fasteners.

The components of high strength bolt assemblies shall meet the requirements of the following:

ASTM A 325 {A 325M} - Bolts
ASTM A 563 {A 563M} - Nuts
ASTM F 436 {F 436M} - Washers
ASTM F 959 - Direct Tension Indicators

Unless otherwise noted by plan details, or approved by the Engineer, Type 1 bolts shall be used for standard construction and Type 3 bolts shall be used with weathering steel.

Galvanization, where required shall be in accordance with the provisions of ASTM B 695 Class 50. When an Inorganic Zinc Paint Primer is specified on the contract plans, all bolts shall be galvanized.

The producer, supplier and distributor shall submit the documentation required to certify that the bolt assembly components are in compliance with these specifications.

These requirements shall be modified or supplemented as follows:

(a) QUALITY ASSURANCE.

Acceptance of bolts, nuts, washers and direct tension indicator washers shall be based on the "Production Lot Method" of identification and quality assurance. A production lot is a group of bolts, nuts, washers or load indicator washers that are the same nominal size, are produced from the same heat of steel and are processed together through all operations to the shipping container. The manufacturer shall identify and maintain the integrity of each production lot from raw-material selection through all processing operations and treatments to final packing and shipment.

(b) MANUFACTURING.

1. BOLTS.

Bolts shall meet the hardness requirements given in ASTM A 325 {A 325M}.

2. NUTS.

Nuts to be galvanized shall be heat treated grade DH.

Plain (ungalvanized) nuts shall be grades C, D or C3 with a minimum Rockwell hardness of 89 HRB (or Brinell hardness 180 HB), or heat treated grades DH or DH3. (The hardness requirements for grades C, D and C3 exceed the current AASHTO/ASTM requirements).

Nuts that are to be galvanized shall be tapped oversize the minimum amount required for proper assembly. The amount of overtap in the nut shall be such that the nut will turn freely on the bolt in the coated condition. Galvanized nuts shall meet the mechanical requirements of ASTM A 563 {A 563M} and the rotational-capacity test herein (the overtapping requirements of ASTM A 563 {A 563M} paragraph 7.4 shall be considered maximum values instead of minimum, as currently shown).

3. MARKING.

All bolts, nuts and washers shall be marked in accordance with the appropriate AASHTO/ASTM Specifications.

(c) TESTING.

1. BOLTS.

Proof load tests (ASTM F 606 Method 1) are required. Minimum frequency of tests shall be as specified in ASTM A 325 {A 325M} paragraph 9.5.

Wedge tests on full size bolts (ASTM F 606 paragraph 3.5) are required. If bolts are to be galvanized, tests shall be performed after galvanizing. Minimum frequency of tests shall be as specified in ASTM A 325 {A 325M} paragraph 9.5.

If galvanized bolts are supplied, the thickness of the zinc coating shall be measured. Measurements shall be taken on the wrench flats or top of bolt head.

2. NUTS.

Proof load tests (ASTM F 606 paragraph 4.2) are required. Minimum frequency of tests shall be as specified in ASTM A 563 {A 563M} paragraph 9.3. If nuts are to be galvanized, tests shall be performed after galvanizing, overtapping and lubricating.

If galvanized nuts are supplied, the thickness of the zinc coating shall be measured. Measurements shall be taken on the wrench flats.

3. WASHERS.

If galvanized washers are supplied, hardness testing shall be performed after galvanizing. (Coating shall be removed prior to taking hardness measurements).

The thickness of the zinc coating shall be measured.

4. ASSEMBLIES.

Rotational-capacity tests are required and shall be performed on all plain and galvanized (after galvanizing) bolt, nut and washer assemblies by the manufacturer or distributor prior to shipping. Washers are required as part of the test.

The following shall apply:

a. Except as modified herein, the rotational-capacity test shall be performed in accordance with the requirements of ASTM A 325 {A 325M}.

b. Each combination of bolt production lot, nut lot and washer lot shall be tested as an assembly. Where washers are not required by the installation procedures, they need not be included in the lot identification. A production lot change of either the bolt, nut, or washer shall require the testing of additional assemblies.

c. A rotational-capacity lot number shall be assigned to each combination of lots tested.

d. The minimum frequency of testing shall be two assemblies per rotational-capacity lot.

e. The bolt, nut and washer assembly shall be assembled in a Skidmore-Wilhelm Calibrator or an acceptable equivalent device (note - this requirement supersedes the current ASTM A 325 {A 325M} requirement that the test be performed in a steel joint). For short bolts which are too short to be assembled in the Skidmore-Wilhelm Calibrator, See Subitem 836.33(c)4.i.

f. The minimum rotation, from a snug tight condition (10% of the specified proof load), shall be:

240° (2/3 turn) for bolt lengths < 4 diameters

360° (1 turn) for bolt lengths > 4 diameters and < 8 diameters

480° (1 1/3 turn) for bolt lengths > 8 diameters

g. The tension reached at the above rotation shall be equal to or greater than 1.15 times the required installation tension. The installation tension and the tension for the turn test are shown below:

Diameter (In.)	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
Req. Installation Tension (kips)	12	19	28	39	51	56	71	85	103
Turn Test Tension (kips)	14	22	32	45	59	64	82	98	118

Diameter {mm}	16	20	22	24	27	30	36
Req. Installation Tension {kN}	94.2	147	182	212	275	337	490
Turn Test Tension {kN}	108.3	169.1	209.3	243.8	316.3	387.6	563.5

h. After the required installation tension listed above has been exceeded, one reading of tension and torque shall be taken and recorded. The torque value shall conform to the following:

$$\text{Torque} \leq 0.25\ PD$$

Where: Torque = measured torque (foot-pounds); P = measured bolt tension (pounds) and D = bolt diameter (feet).

i. Bolts that are too short to test in a Skidmore-Wilhelm Calibrator may be tested in a steel joint. The tension requirement of Subitem 836.33(c)4.g. need not apply. The maximum torque requirement of Subitem 836.33(c)4.h. shall be computed using a value of P equal to the turn test tension shown in the table in Subitem 836.33(c)4.g.

5. REPORTING.

The results of all tests (including zinc coating thickness) required herein and in the appropriate AASHTO specifications shall be recorded.

The location where tests are performed and the date of tests shall be recorded.

(d) DOCUMENTATION.

1. MILL TEST REPORT(S) (MTR).

An MTR shall be furnished for all mill steel used in the manufacture of the bolts, nuts, and washers.

The place where the material was melted and manufactured shall be shown on the MTR.

2. MANUFACTURER CERTIFIED TEST REPORT(S) (MCTR).

The manufacturer of the bolts, nuts and washers shall furnish test reports (MCTR) for the item furnished.

Each MCTR shall show the relevant information required in accordance with Item 836.33(c)5.

The manufacturer performing the rotational-capacity test shall include on the MCTR:

a. The lot number of each of the items tested.
b. The rotational-capacity lot number as required in Subitem 836.33(c)4.c.
c. The results of the tests required in Item 836.33(c)4.
d. The pertinent information required in Item 836.33(c)5.
e. A statement that MCTR for the items are in conformance to this specification and the appropriate AASHTO specifications.
f. The location where the bolt assembly components were manufactured.

3. DISTRIBUTOR CERTIFIED TEST REPORT(S) (DCTR).

The DCTR shall include MCTR above for the various bolt assembly components.

The rotational-capacity test may be performed by a distributor (in lieu of a manufacturer) and reported on the DCTR.

The results of the tests required in Item 836.33(c)4. shall be shown on the DCTR.

The pertinent information required in Item 836.33(c)5. shall be shown on the DCTR.

The rotational-capacity lot number as required in Subitem 836.33(c)4.c. shall be shown on the DCTR.

The DCTR shall contain a statement that the MCTR are in conformance to this specification and the appropriate AASHTO specifications.

(e) SHIPPING.

Bolts, nuts and washers from each rotational-capacity lot shall be shipped in the same container. If there is only one production lot number for each size of nut and washer, the nuts and washers may be shipped in separate containers. Each container shall be permanently marked with the rotational- capacity lot number such that identification will be possible at any stage prior to installation.

836.46 Welds.

(a) GENERAL.

Subarticle 836.46(a) shall be replaced with the following:

(a) GENERAL.

Shop welding shall be performed by Submerged Arc Welding (SAW) in accordance with the specification noted herein. In the event the above method cannot be used, approved manual welding or other approved and qualified automatic or semi-automatic methods may be authorized.

Field Welding shall be performed by manual Shielded Metal Arc Welding (SMAW) using approved electrodes and procedures in accordance with the specifications noted herein.

If a minimum of 3 inches (75 mm} of excess material beyond the theoretical end cuts does not exist, extension bars or run-off tabs shall be used at girder ends to insure sound welds on web to flange welds.

All welding shall be subject to the inspection and approval of the Engineer or his representative. During inspection of the work any workman, including welders and inspection technicians, who, in the opinion of the Engineer, produces inferior work, may under the provision of Article 108.06 be disqualified from performing Departmental work.

All welding shall be in accordance with the American National Standards Institute, American Association of State Highway and Transportation Officials, American Welding Society (ANSI/AASHTO/AWS) Bridge Welding Code D1.5/D1.5M-2008, as modified by the following:

Article 3.1. A new sentence shall be added to paragraph 3.1.3 as follows:

"Shop welding, except for minor secondary members and minor repair welding, shall be done under a cover of a permanent structure and/or building capable of protecting the actual welding operation from inclement weather. Any standing water that would be dangerous to the welder or operator or to the integrity of the weld itself shall be cause for the welding to stop until such time as the situation is corrected."

Paragraph 3.2.9. This paragraph shall be deleted and the following substituted in lieu thereof:

"Paragraph 3.2.9. All corners of thermal cut or sheared edges, including edges of flanges of beams and girders along with splice material and other sharp edges deemed undesirable by the Engineer on structural members designated to be coated shall be slightly rounded. Said rounding shall be accomplished by light grinding to produce a satisfactory surface for painting (approximately 1/16 inch {1.6 mm} radius). The grinding shall be performed in such a manner as to produce a neat workmanship like product without nicks or notches in the metal."

A new paragraph to 3.5.1.9 shall be added as follows:

"Paragraph 3.5.1.9 Gaps shall not exceed 0.040 inches {1.0 mm) between the contact surfaces at the bottom flanges of beams or girders and steel bearing plates. There shall be no gap for at least 75% of this contact area."

New Paragraphs 4.9.5, 4.10.7, and 4.11.7 shall be added as follows:

"Paragraph 4.9.5. (SAW – single electrode), 4.10.7 (SAW – parallel electrodes), 4.11.7 (SAW – multiple electrodes). A properly operated heating torch shall run immediately ahead (about 12 inches {300 mm}, and on the same side, in advance of the point of welding) of the submerged arc welding head to remove moisture from the steel in the vicinity of the weld when making web to flange fillet welds of plate girders. Gases producing moisture in welding operations are discouraged unless it can be shown that the resultant temperature of the metal is sufficient to vaporize any moisture that might be present."

A New Paragraph 6.7.2.4. shall be added as follows:

“Paragraph 6.7.2.4. Magnetic particle examination of all fillet welds and/or reinforcement welds used in bearing assembly fabrication and a minimum of 10% of all fillet welds in expansion dams is required. If defects are found which require repair they shall be re-examined with magnetic particle testing after the repairs are made. Magnetic particle examination shall follow the procedures and requirements as outlined in AWS Subsection 6.7.

A New Paragraph 6.7.7.1. shall be added as follows:

“Paragraph 6.7.7.1. Dye penetrant (PT) examination of all edges of complete joint penetration groove welds in main members is required. This examination shall be performed prior to and in addition to the required radiographic testing (RT) or ultrasonic testing (UT). If defects are found which require repair these areas shall be re-examined with PT after repairs are made. Written documentation of all non-destructive testing performed on all welding which requires NDT testing shall be submitted to the ALDOT representative within 24 hours of completion of the tests.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: July 13, 2012 Special Provision No. 12-0353

EFFECTIVE DATE: November 1, 2012

SUBJECT: Bridge and Sidewalk Handrail.

Alabama Standard Specifications, 2012 Edition, SECTION 517 shall be amended as follows:

SECTION 517
BRIDGE AND SIDEWALK HANDRAIL

517.02 Materials.

This Article [517.02] shall be replaced by the following:

517.02 Materials.

Materials used in fabrication and installation shall conform to the applicable Section of the Specifications that the structure to which the railing is to be attached was constructed, the details shown on the plans, and the following:

Galvanized Steel Pipe Handrail. Galvanized steel pipe shall meet the requirements of ASTM A 53, Grade B; this grade of pipe to include rail elements and post.

Steel shapes, plates, and accessories shall be structural or alloy steel galvanized in accordance with AASHTO M 111.

Bolts, nuts, washers, and other fasteners shall be galvanized in accordance with AASHTO M 232, Class C, with nuts tapped after galvanization in accordance with ASTM A 563 {A 563M}.

Galvanized Steel Handrail. Galvanized steel shall be structural or alloy steel, hot dipped galvanized after fabrication in accordance with AASHTO M 111.

Bolts, nuts, washers, and other fasteners shall be galvanized in accordance with AASHTO M 232, Class C, with nuts tapped after galvanization in accordance with ASTM A 563 {A 563M}.

Beam Type Handrail. Beam type handrail shall meet the requirements for beam guardrail as provided in Sections 630 and 864.

Aluminum or Galvanized Steel Sidewalk Handrail. Material for use in aluminum or galvanized steel sidewalk handrail shall meet the requirements specified on the plans.

Concrete Handrail. Concrete handrail shall be cast-in-place type conforming to the appropriate requirements of Section 501 and the details shown on the plans.

Posts for Beam Type Handrail. Steel posts shall meet the requirements of Sections 836 and 864.

Timber posts shall be treated in accordance with Section 833.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: July 13, 2012 Special Provision No. 12-0355

EFFECTIVE DATE: November 1, 2012

SUBJECT: Mineral Filler, Hydrated Lime, Calcium Chloride, Brick, and Blocks.

Alabama Standard Specifications, 2012 Edition, SECTION 805 shall be replaced by the following:

SECTION 805
MINERAL FILLER, HYDRATED LIME,CALCIUM CHLORIDE, BRICK, AND BLOCKS

805.01 Mineral Filler, Hydrated Lime, Calcium Chloride, Brick, and Blocks.

These minerals shall meet the following requirements:

Mineral Filler	AASHTO M 17
Hydrated Lime	ASTM C 207, Type N.
Calcium Chloride	AASHTO M 144, Type S or L
Sewer Brick	AASHTO M 91, Grade S.M. or M.M.
Building Brick (Clay or Shale)	ASTM C 62, Grade S.W. or M.W.
Concrete Brick (Manholes, etc)	ASTM C 55, Type 11, Grade S
Concrete Brick (Buildings)	ASTM C 55, Type 1, Grade N-I or N-II
Concrete Block (Hollow Load Bearing)	ASTM C 90, Grade N, Type I or II

805.02 Mineral Filler for Hot Mix Asphalt.

These minerals shall consist of finely divided mineral matter such as crusher fines, rock dust, slag dust, hydrated lime, hydraulic cement, Portland cement, loess or Class "F" fly ash meeting the requirements of AASHTO M 17. Any lime based product shall meet the requirements of AASHTO M 303.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: July 13, 2012 Special Provision No. 12-0356

EFFECTIVE DATE: November 1, 2012

SUBJECT: Concrete Curing Materials.

Alabama Standard Specifications, 2012 Edition, SECTION 830 shall be amended as follows:

SECTION 830
CONCRETE CURING MATERIALS

830.01 Burlap Cloth and Waterproof Covering Material.

(b) TYPES OF COVERING MATERIAL.

This Subarticle [830.01(b)] shall be replaced with the following:

(b) TYPES OF COVERING MATERIAL.

1. Burlap cloth shall conform to the requirements of AASHTO M 182 for Class 4 burlap.
2. White Waterproof Paper shall conform to the requirements of ASTM C 171.
3. Polyethylene sheeting (film) shall be white opaque conforming to the requirements of ASTM C 171 modified to omit the elongation requirements when the sheeting is internally reinforced with a cord net having a cord spacing of 1/4 to 1/2 of an inch {6 to 13 mm}. (Net may be nylon or other approved material.)
4. White Burlap Polyethylene sheet shall conform to the requirements of ASTM C 171.

830.02 Impervious Membrane.

This Article [830.02] shall be replaced with the following:

830.02 Impervious Membrane.

Impervious membrane compounds shall meet the requirements of ASTM C 309, Class A. Type 2 white pigmented shall be used on concrete pavement. Other types may be used on other concrete.

Membrane liquid shall be applied under pressure with spray nozzles in such a manner as to cover the area being treated with a uniform film. For concrete pavement the rate of application shall be 1 gallon {4 L} to not more than 135 square feet {13 m²}, applied in two applications. For sidewalks the rate of application shall be 1 gallon {4 L} to not more than 200 square feet {19 m²}.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: July 13, 2012 Special Provision No. 12-0358

EFFECTIVE DATE: November 1, 2012

SUBJECT: Pipe Culvert Joint Sealers.

Alabama Standard Specifications, 2012 Edition, SECTION 846 shall be amended as follows:

SECTION 846
PIPE CULVERT JOINT SEALERS

846.01 Rigid Pipes.

(d) RUBBER GASKETS.

This Subarticle [846.01(d)] shall be replaced by the following:

(d) RUBBER GASKETS.

Rubber gaskets, meeting the requirements of ASTM C 990, shall be used only on joints specifically designed for the use with this type gasket. Special conditions, where noted on the plans, may require the use of this type gasket exclusively; under this condition pipe joints shall comply with the requirements of ASTM C 990 except that for pipe to be used in culvert construction the exfilteration or infilteration test will not be required.

When rubber type gaskets are used, the pipe and/or gasket manufacturer shall furnish the Engineer with a certification showing the physical properties of the gasket and results of hydrostatic tests of the gasket and pipe to be used in the work.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: July 13, 2012 Special Provision No. 12-0359

EFFECTIVE DATE: November 1, 2012

SUBJECT: Coatings, Paints, Enamels, and Varnishes.

Alabama Standard Specifications, 2012 Edition, SECTION 855 shall be amended as follows:

SECTION 855
COATINGS, PAINTS, ENAMELS, AND VARNISHES FOR METAL AND WOOD STRUCTURES

855.03 Identification and Certification.

Subarticle 855.03(c) shall be replaced with the following:

(c) Each system of inorganic zinc primer used on bolted connection surfaces (faying) shall be qualified in accordance with "Testing Method to Determine The Slip Coefficient For Coatings Used In Bolted Joints" as adopted by the Research Council On Structural Connections. This qualification is required for the systems shown on List III-1 in the Materials Sources and Devices with Special Acceptance Requirements manual. See Appendix A of Allowable Stress Design Specification For Structural Joints Using ASTM A 325 {A 325M} or ASTM A 490 {A 490M}Bolts published by the Research Council On Structural Connections. All inorganic zinc primers shall have a minimum slip coefficient of 0.33 unless shown otherwise on the bridge plans.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: March 20, 2014 Special Provision No. 12-0399(3)

EFFECTIVE DATE: August 1, 2014

SUBJECT: Temporary Soil Erosion and Sediment Control.

Alabama Standard Specifications, 2012 Edition, SECTION 106 and SECTION 665, shall be modified as follows:

SECTION 106
CONTROL OF MATERIALS

106.01 Source of Supply and Quality Requirements.

(b) CLEARANCES AND ACKNOWLEDGMENTS FOR THE USE OF OFFSITE AREAS.

2. SUBMITTAL OF COPIES OF REGULATORY CLEARANCES AND ACKNOWLEDGMENTS.

Item 106.01(b)2 shall be replaced with the following:

2. SUBMITTAL OF COPIES OF REGULATORY CLEARANCES AND ACKNOWLEDGMENTS.

The Contractor shall submit copies of clearances and acknowledgements as verification that regulatory authorities are aware of the offsite activity and that the activity will not adversely impact natural resources.

Clearances and acknowledgements will not be required for offsite areas used for short term parking, staging or material stockpiling where the activity does not require clearing or grading. Only a copy of applicable ADEM permitting will be required for offsite areas commercially owned and operated by a third party that is not an ALDOT contractor or subcontractor.

SECTION 665
TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

Section 665 shall be replaced with the following:

SECTION 665
TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

665.01 Description.

This Section shall cover, but not limit, those items of temporary soil erosion and sediment control necessary for the management of construction stormwater discharge quality. The Contractor shall provide and maintain temporary soil erosion and sediment controls designed to protect the project site from soil erosion and adjacent property and waters from damage by sediment transport and deposition during construction. These temporary soil erosion and sediment controls shall be referred to as "Best Management Practices" (BMPs). A BMP is any procedure, process, technique, plan or device that can be utilized to enhance the control of soil erosion and sediment transport.

665.02 Materials.

(a) TEMPORARY SEEDING.

Seeds shall be furnished in accordance with the requirements given in Item 860.01(a)1. Seed mixes used for temporary seeding shall be in accordance with the following table:

TEMPORARY SEEDING	
September through December	
Annual Ryegrass	25 pounds per acre {28 kg per hectare}
Kentucky 31 Fescue	30 pounds per acre {34 kg per hectare}
Reseeding Crimson Clover	10 pounds per acre {11 kg per hectare}
January through April 15	
Kentucky 31 Fescue	30 pounds per acre {34 kg per hectare}
Reseeding Crimson Clover	30 pounds per acre {34 kg per hectare}
Annual Ryegrass	15 pounds per acre {18 kg per hectare}
April 16 through August	
Brown Top Millet	30 pounds per acre {34 kg per hectare}
Kentucky 31 Fescue	30 pounds per acre {34 kg per hectare}
Hulled Bermuda Grass	10 pounds per acre {11 kg per hectare}

(b) TEMPORARY MULCHING.

Temporary mulching materials shall conform to the requirements given in Article 860.03 for Mulching Material.

(c) TEMPORARY PIPE.

Temporary pipe may be constructed of any type of material that will be suitable for the required work. The inside diameter of the pipe shall be selected by the Contractor based on expected flows and shall be a minimum of 12 inches {300 mm} or as shown on the plans. End treatments, joint sections, and tees shall also be of materials and sizes that are suitable for the required work. Anchors shall be installed when required to keep the pipe in place.

(d) POLYETHYLENE.

Polyethylene sheets may be of any size or color capable of serving the purpose intended provided it is of at least 4 mil {0.1 mm} in thickness.

(e) TEMPORARY COARSE AGGREGATE.

Temporary coarse aggregate shall be either stone or concrete from the demolition of structures on the Right of Way.

Stone aggregate for stabilized construction entrances and temporary access roads to sedimentation basins shall meet the requirements for ALDOT Number 1 coarse aggregate given in Section 801. Concrete from the demolition of structures shall meet the gradation requirements for ALDOT Number 1 coarse aggregate given in Section 801. Reinforcing steel shall be removed from the concrete used for temporary coarse aggregate.

Stone aggregate for other erosion and sediment control purposes shall be the size shown on the plans and shall meet the requirements given in Section 801.

(f) TEMPORARY RIPRAP.

Unless shown otherwise on the plans, temporary riprap shall be either stone or concrete from the demolition of structures on the Right of Way. Stone riprap shall meet the requirements for Class 2 riprap given in Section 814. Concrete from the demolition of structures shall meet the size and weight requirements given for Class 2 riprap in Section 814. Reinforcing steel shall be cut flush with the surfaces of the demolished concrete. The geotextile used for both underlayment and as a choker shall meet the requirements of AASHTO M288 for Permanent Erosion Control Geotextile, Class 1. A list of geotextile materials acceptable for use in this application (List II-3 “GEOTEXTILES”) is given in the ALDOT manual titled “Materials, Sources, and Devices with Special Acceptance Requirements”. Choker stone shall meet the requirements of Section 801.

(g) HAY BALES.

Bales may be either hay or straw containing 5 cubic feet {0.14 m^3} of material and having a weight {mass} of not less than 35 pounds {16 kg} with a minimum length of 3 feet {0.9 m}.

(h) SAND BAGS.

Bags may be cotton, burlap, woven polypropylene, polyethylene, polyamide fabric or other material that will adequately confine the aggregate content for the duration of the use of the bag. Bags shall be filled with sand, limestone screenings or aggregate that is smaller than ALDOT #78. Fill material shall be selected by the Contractor based on the required bag application. Each filled bag shall have minimum dimensions of 18" x 12" x 3" {450 mm x 305 mm x 75 mm} and shall have a minimum weight {mass} of 30 pounds {13 kg}.

(i) SILT FENCE.

Silt fence shall be a geotextile filter supported between posts with a wire mesh backing as shown on the plans. Posts shall be strong enough to provide and retain the fence configuration shown on the plans while being subjected to loading of silt, water and debris.

Silt fence shall meet the requirements given in Section 810 and AASHTO M 288 as supplemented by the following requirements:

- The support backing for the geotextile shall be 14 gage steel wire mesh. The vertical spacing of the wire in the mesh shall be 6 {150 mm} inches. The minimum horizontal spacing of the wires shall be 6 inches {150 mm} and the maximum horizontal spacing shall be 12 inches {300 mm}.

- The geotextile filter shall be either a non-woven geotextile or a woven geotextile composed of monofilament yarns.

A list of geotextile materials acceptable for use in this application (List II-3 "GEOTEXTILES") is given in the ALDOT manual titled "Materials, Sources, and Devices with Special Acceptance Requirements".

(j) WATTLES.

A wattle shall be a tubular shaped product specifically manufactured for erosion and sediment control. Biodegradable wattles shall be manufactured using interwoven biodegradable plant material such as straw, coir, or wood shavings in biodegradable or photodegradable netting that is of sufficient strength to resist damage during handling, installation and use. Wattles manufactured using non-biodegradable materials shall be completely removed from the project when no longer required or useful. Disposal shall be in accordance with recommendations from the wattle manufacturer.

The required minimum diameter of the wattle shall be determined based upon its intended application and shall be as follows unless shown otherwise on the plans. When installed for the purposes of slowing sheet flow or by interrupting the lengths of longer slopes (slopes longer than 50 feet {15 m}), the minimum diameter of the wattle shall be 9 inches {230 mm}. For all other applications including perimeter sediment barriers the minimum diameter of the wattle shall be 20 inches {500 mm}. Wattles of smaller than required diameter may be provided as a stacked installation in accordance with manufacturer recommendations for stacking if the total height of the installation is at least 20 inches {500 mm}. The diameter or height will be verified by measuring the wattle after installation. Wattles installed in a ditch check application shall have a geotextile underlayment that shall meet the requirements of AASHTO M288 for Permanent Erosion Control Geotextile, Class 1. A list of geotextile materials acceptable for use in this application (List II-3 "GEOTEXTILES") is given in the ALDOT manual titled "Materials, Sources, and Devices with Special Acceptance Requirements". A geotextile underlayment is not required if the ditch is otherwise lined with materials such as rolled erosion control product, sod, or established permanent vegetation.

A list of acceptable manufactured wattle products (LIST II-24 "TEMPORARY EROSION AND SEDIMENT CONTROL PRODUCTS") is given in the ALDOT manual titled "Materials, Sources, and Devices with Special Acceptance Requirements".

(k) SILT DIKES.

Silt dikes shall be a triangular shaped cross section with a height of at least 8" {200 mm} in the center with equal length sides and a 16" to 20" {400 mm to 500 mm) base. The triangular shape shall be urethane foam. The outer cover shall be a woven geotextile fabric placed around the urethane foam. The geotextile shall also extend beyond both sides of the triangle at least 2 feet {600 mm}. Dikes shall be attached to the ground with wire staples in accordance with the silt dike manufacturer's recommendations.

(l) BRUSH BARRIER.

Brush Barriers shall be constructed of selected brush, limbs and small trees from the clearing operations. The geotextile used for both underlayment and as a choker shall meet the requirements of AASHTO M288 for Permanent Erosion Control Geotextile, Class 1. A list of geotextile materials acceptable for use in this application (LIST II-3 “GEOTEXTILES”) is given in the ALDOT manual titled “Materials, Sources, and Devices with Special Acceptance Requirements”.

(m) MANUFACTURED INLET PROTECTION DEVICE.

Manufactured Inlet Protection Devices shall be provided in accordance with requirements shown on the plans. Manufactured inlet protection devices shall consist of filter fabric held in place by a rigid frame. The frame shall be strong enough to support the stormwater flow and weight of any sediment that accumulates on the filter. The manufactured inlet protection device shall have an overflow feature to allow the passage of water during high flow conditions. The filter fabric shall have the following properties:

- Minimum Tensile Strength (Machine Direction) of 80 pounds {355 Newtons} (ASTM D 4632);
- Minimum Permittivity of 0.05 sec^{-1} (ASTM D 4491);
- Maximum Apparent Opening Size of US Std #30 sieve {0.60 mm} (ASTM D 4751);
- Minimum UV Stability of 70% (ASTM D 4355 at 500 hours).

A list of acceptable manufactured inlet protection devices (LIST II-24 “TEMPORARY EROSION AND SEDIMENT CONTROL PRODUCTS”) is given in the ALDOT manual titled “Materials, Sources, and Devices with Special Acceptance Requirements”.

(n) FLOATING BASIN BOOM.

Floating basin booms shall consist of a reinforced fabric attached on the upper side to floatation members and ballasted on the lower side with chains or weights to form a bottom-tensioned floating curtain boom. Floating basin booms shall be devices manufactured specifically for use in containing sediment suspended in water.

All materials used in the floating basin boom shall comply with the requirements shown on the plan details and the manufacturer's recommendations for the intended application.

The floatation members shall be made of foam with a minimum diameter of 6 inches {150 mm} or as shown on the plans. The skirt depth below the foam floatation shall be a minimum of 5 feet {1.5 meters} or as shown on the plans. The ballast shall be galvanized proof coil chains or other acceptable weights capable of retaining the skirt in a vertical position. The boom shall be Yellow or International Orange in color.

Anchors capable of holding the floating basin boom in place shall be made of a material recommended by the manufacturer.

(o) SEDIMENTATION BASINS.

Components of sedimentation basins shall meet the requirements shown on the plans. Materials for the construction of the sedimentation basins shall be selected from the lists in the Department’s "Materials, Sources and Devices with Special Acceptance Requirements" if lists are available for the materials. If lists are not available, materials shall be provided in accordance with all applicable Department specifications and shall be of a quality that enables the sedimentation basin to function as intended for the duration of the need of the sedimentation basin.

The Contractor shall submit a description of all of the materials proposed for the construction of the sedimentation basins. The proposed list of materials shall be submitted with the submittal of the Stormwater Management Plan (SWMP) that is described in Subarticle 108.04(b).

(p) FLOW BAFFLES.

Flow Baffles shall be a rolled erosion control product supported between posts with a wire mesh backing as shown on the plans. The posts and wire mesh shall meet the same requirements as given for silt fence. The rolled erosion control product shall consist of 100 % coconut (coir) fibers and meet the following requirements:

- Minimum Weight of 20 ounces per square yard {678 grams per square meter} (ASTM D 5261);
- Open Area of 50% as determined by physical measurement.

A list of materials acceptable for use in this application (List II-24 “TEMPORARY EROSION AND SEDIMENT CONTROL PRODUCTS”) is given in the ALDOT manual titled “Materials, Sources, and Devices with Special Acceptance Requirements”.

(q) BASIN DEWATERING DEVICES.

Basin Dewatering Devices shall be a product or structure that withdraws water from the surface of the basin and meets the requirements that are shown on the plans. A list of acceptable basin dewatering devices- (List II-24 "TEMPORARY EROSION AND SEDIMENT CONTROL PRODUCTS") is given in the ALDOT manual titled "Materials, Sources, and Devices with Special Acceptance Requirements".

665.03 Construction Requirements.

(a) EROSION CONTROL AND RUNOFF CONVEYANCE.

1. TEMPORARY SEEDING AND MULCHING.

a. Inspection to Evaluate Temporary Stabilization.

The project shall be inspected in accordance with the requirements given in Item 107.21(d)2. Areas of the project not undergoing active construction shall be evaluated for temporary stabilization requirements.

b. Temporary Mulching Only.

At locations where final grading should be completed within 60 calendar days, all bare ground shall be stabilized with temporary mulching applied by either hydraulic or conventional methods at a rate of no less than 3.0 tons per acre.

c. Temporary Seeding and Mulching.

At locations where final grading will not be completed within 60 calendar days, all bare ground shall be stabilized with temporary seeding and mulching.

Ground preparation will not be required for temporary seeding and temporary mulching except as follows. Areas to be seeded temporarily shall be left in a rough graded condition. Areas that are smooth or hard shall be lightly scarified with scarifying teeth or some other acceptable method, running perpendicular to the direction of water flow. The intent of this scarifying is to obtain a rough area to hold seed and prevent the formation of rills and gulleys. Areas where sight distances must be maintained shall be bladed smooth. All debris in these areas shall be removed to allow mowing.

Application of 1000 pounds {1120 kg} of 8-8-8 fertilizer per acre {hectare} shall be applied by either hydraulic or conventional methods. Seeding and mulching shall also be applied by either hydraulic or conventional methods at a rate of no less than 2.0 tons per acre, separately or concurrently with fertilizer.

d. Anchoring of Temporary Mulching near Traffic and Streams.

Temporary mulch within 10 feet {3 meters} of traffic or live streams shall be anchored by either crimping, the application of a tackifier adhesive, or the installation of a mulch control netting in accordance with the requirements given in Section 656.

e. Acceptance of Temporary Seeding and Mulching.

Full payment for Temporary Mulching will be made after application of the mulch in accordance with the requirements given in Section 656. Payment for Temporary Seeding will be made in full upon satisfactory application. Acceptance of the Temporary Seeding item requires a cover of living plants capable of effectively preventing soil erosion until such time that permanent soil erosion prevention measures can be installed.

2. POLYETHELENE.

Polyethylene sheets shall be placed to eliminate soil erosion on the surfaces of slopes, berms, ditches, and at other locations shown on the plans, accepted SWMP, or as directed by the Engineer. The sheets shall be installed flat and securely anchored to the ground after the ground has been cleared of all objects that may tear the sheets. Upstream sheets shall overlap downstream sheets a minimum of 6 inches {150 mm}. Anchors are considered incidental to this work.

3. TEMPORARY EARTH BERMS.

Temporary earth berms shall be constructed at the top of cut or fill sections and at other locations where the diversion of water is required. Stream diversion is addressed in Sections 107 and 524. Temporary earth berms shall be constructed at locations shown on the plans, the approved SWMP or as directed by the Engineer. Temporary earth berms may be plated with polyethylene or aggregate. The height of the berms shall be a minimum of 2 feet {600 mm} after compaction. The width of the top of the berm shall be 2 feet {600 mm} with 2:1 side slopes. The construction of berms is encouraged and

berms of a very temporary nature may be constructed by the windrowing of material. There will be no direct payment for berms not meeting requirements given in this Section and the requirements shown in the plans. If Pay Item 665-T is not included in the contract, the cost of constructing Temporary Earth Berms will be considered incidental to the grading operation.

4. TEMPORARY PIPE.

Temporary Pipe shall be sized to carry the anticipated volumes of flow and shall be installed as permitted by the Engineer or as shown on the plans. The length shall be as determined by the Engineer. Temporary pipes may be placed without the bedding requirements required for the installation of permanent pipe. Pipes shall be securely anchored. Any required tees or joint sections are considered incidental to the work. End treatments shall be installed in a manner to allow the pipe to function effectively.

5. STABILIZED CONSTRUCTION ENTRANCE.

Stabilized construction entrances shall be constructed of materials, at the locations, and to the dimensions shown on the plans, as modified in the accepted SWMP or as directed by the Engineer. The Contractor shall be responsible for maintaining the construction entrance to prevent sediment tracking.

6. DUST CONTROL.

The contractor shall prevent visible dust from leaving the project site by the use of water, dust control agents, or other effective means as approved and directed by the Engineer. Dust control shall be considered ineffective where dust creates a potentially unsafe condition, public nuisance or condition endangering the value, utility or appearance of any property. There will be no direct compensation for dust control.

7. SLOPE TRACKING.

Slope tracking or the surface roughening of slopes shall be accomplished by the walking of tracked equipment upslope and downslope (not along the slope) over the entire erodible area. Slope tracking shall be performed on slopes that are 4:1 or steeper and longer than 20 feet. Slope tracking shall be performed immediately after the final shaping of the slope.

(b) SEDIMENT CONTROL.

1. PLACEMENT OF SEDIMENT CONTROL BMPS IN STREAMS.

Sediment control BMPs shall not be placed in a live stream for the purpose of capturing upland sediment. Additionally, no live stream shall be dammed or ponded for the purpose of water access and usage. Secondary sediment control BMPs in the form of Floating Basin Booms may be placed in live streams parallel to the flow along the bank only as shown in the plans or at the direction of the Engineer.

2. DITCH CHECKS.

Ditch checks shall be constructed at locations shown on the plans, the accepted SWMP or as directed by the Engineer. Materials and products used to construct ditch checks may include sand bags, hay bales, wattles with geotextile, silt fence, silt dikes, or rock with geotextile. The materials used shall be installed in accordance with the requirements given in this Section, the requirements shown on the plans and the manufacturer's recommendations for manufactured products.

3. SEDIMENT BARRIERS.

Sediment barriers shall be constructed at the locations shown on the plans, the accepted SWMP or where directed by the Engineer to intercept sheet flow runoff and to treat concrete washout wastewater. Sediment barriers utilized for sediment control adjacent to the construction limits or a live steam shall be installed prior to beginning any grubbing work in the contributing drainage area. Types of sediment barrier may include silt fence, hay bales, sand bags, silt dikes or wattles. The materials used shall be installed in accordance with the requirements given in this Section, the requirements shown on the plans and the manufacturer's recommendations for manufactured products.

4. BRUSH BARRIERS.

Brush barriers shall be constructed at the locations shown on the plans, the approved SWMP or where directed or permitted by the Engineer. Brush barriers may be constructed in rural areas where natural ground is sloping away from the project. Brush barriers shall be compacted to a relatively dense barrier with uniform heights of between 3 and 5 feet and base widths of between 5

and 10 feet {between 1.5 m and 3.0 m} perpendicular to the flow. Geotextile underlayment and geotextile choker shall be securely attached to the faces of brush barriers. These barriers shall be removed when no longer needed unless otherwise directed by the Engineer.

5. INLET PROTECTION.

Inlet protection shall be installed at locations and in accordance with requirements shown on the plans for the appropriate stages of construction or as directed by the Engineer. Approved manufactured products shall be installed as per manufacturer's recommendations. Site constructed protection may include wattles, silt fence, sand bags, drainage sumps or other practices shown on the plans or directed by the Engineer. In no case will in-structure protection be allowed.

Stage 1 Inlet Protection shall be installed after the outflow drainage has been installed and prior to the construction of the inlet. Stage 1 Inlet Protection shall be ditch checks and/or sediment barriers and shall allow sufficient access to continue inlet construction.

Stage 2 Inlet Protection shall be installed after the inlet is constructed and prior to backfilling. Stage 2 Inlet Protection shall be a sediment barrier. Hay bales are not acceptable for use during this stage of inlet construction.

Stage 3 Protection is required after inlets are completed through grate installation and prior to complete stabilization of the area surrounding the inlet. Stage 3 Inlet Protection for drop inlets shall be in accordance with requirements and details shown on the plans. Stage 3 Inlet Protection shall be a manufactured inlet protection device or constructed with coarse aggregate, wattles or sand bags. Hay bales are not acceptable for use during this stage of inlet construction.

Stage 4 Inlet Protection for drop inlets shall be in accordance with requirements shown on the plans. Stage 4 Inlet Protection shall be a manufactured inlet protection device or constructed with hay bales, wattles or sandbags stacked at least three bags high. Hay bales, sand bags and wattles shall be used as a barrier along the perimeter of the slope paved apron as shown on the plans for a minimum distance of 20 feet {6.1 m}. If impervious surfaces extend beyond 20 feet {6.1 m}, sand bags shall be used as a barrier across the surface 20 feet {6.1 m} from the inlet. Stage 4 Protection will only be required where there is surrounding impervious surfaces that may receive sediment laden runoff.

All inlet protection installations shall be constructed to ensure that runoff does not bypass the inlet. Components of inlet protection may be reused on future installations provided the condition meets the material requirements given in this Section.

6. OUTLET PROTECTION.

Outlet protection required by the plans or directed by the Engineer shall be installed in accordance with the details shown on the plans as soon as practicable after the completion of the drainage structures.

7. DRAINAGE SUMPS.

Temporary drainage sumps shall be constructed as shown on the plans and in locations directed or permitted by the Engineer using the Erosion and Sediment Control Plan (ESCP) as guidance for the location. In general, the shape should be rectangular at the surface with the longer dimension parallel to the flow of water. The minimum volume shall be that shown on the plans. Sumps may be constructed with larger volumes as directed and permitted by the Engineer.

Construction of the sumps shall be accomplished by methods and equipment suitable for the purpose and acceptable to the Engineer. The sump may be supplemented by the use of a ditch check, temporary pipe, polyethylene or other temporary items shown on the plans or approved by the Engineer.

When the sump is deemed of no further use, it shall be backfilled with suitable material and compacted as directed and the area dressed and shaped to blend with the adjacent natural ground.

8. SEDIMENTATION BASINS.

Sedimentation basins shall be constructed in accordance with the details shown on the plans and at the locations shown on the plans or as directed by the Engineer. Sedimentation basins shall be constructed prior to beginning grading operations in the contributing drainage area. Where sedimentation basins are to be constructed in locations where permanent ditches are required, the required ditch lines and grades shall be utilized for the construction of the sedimentation basins. During removal of the sedimentation basin, aggregate used to construct the sedimentation basin may

remain in the ditch as a permanent lining. Sedimentation basins are designed to allow the removal of sediment and turbidity from stormwater runoff by the flocculation and settlement of suspended particles. The removal of sediment and turbidity shall be accomplished by the retention of stormwater runoff in the basin for a period of time before completely draining. In no case shall sediment be allowed to exceed one third of the height of the forebay or drainage sump adjacent to the inlet of the basin.

Access roads to facilitate maintenance efforts shall be constructed of materials, at the locations, and to the dimensions shown on the plans, as modified in the accepted SWMP or as directed by the Engineer. The Contractor shall be responsible for maintaining the access road until directed by the Engineer to perform basin removal or retrofit. The Contractor shall take care during removal of accumulated sediment to not puncture the basin liner. The Contractor shall also take care during removal or retrofit of the sedimentation basin to not excavate past the original basin bottom elevation unless otherwise directed by the Engineer.

9. FLOW BAFFLES.

Flow Baffles shall be installed in sedimentation basins or ditch applications as required by the plans to reduce the velocity of stormwater runoff. They shall be installed in accordance with the details shown on the plans.

10. BASIN DEWATERING DEVICES.

Basin Dewatering Devices shall be installed in sedimentation basins in accordance with the details shown on the plans. Each device shall be capable of dewatering the full capacity of the basin over a period of 72 hours unless otherwise specified in the plans. Each device shall have a shutoff valve on the outlet pipe that should remain closed until discharges meet state water quality standards and the requirements of the ADEM NPDES General Permit.

11. FLOATING BASIN BOOMS.

Floating basin booms shall be installed only for secondary sediment containment or to prevent the migration of sediment within a water body. Floating Basin Booms shall be installed at the locations shown on the plans, the accepted SWMP or as directed by the Engineer. Installation shall be as shown on the plans and as recommended by the manufacturer. Basin Booms shall not be installed in locations where they will not be effective or in conditions where continuous maintenance is not practical.

(c) MAINTENANCE AND REMOVAL REQUIREMENTS.

The Contractor shall be responsible for daily inspection, daily preventative maintenance and immediate repairs of all temporary soil erosion and sediment control items. The Contractor shall maintain on-site, or have readily available, sufficient erosion and sediment control devices and materials to perform maintenance, repairs, and prepare the site for impending rain events. All BMPs which capture sediment shall be cleaned by the removal and disposal of sediment when the holding capacity reaches one third full and when necessary for the BMP to remain functional. Any offsite sediment loss shall be removed as directed by the Engineer. Any offsite-tracking of sediment onto public roadways shall be removed and construction entrances shall be stabilized as needed. Sediment removed during the maintenance of BMPs or collected from off-site cleanup should be reincorporated into the site or disposed of as approved by the Engineer.

All temporary soil erosion and sediment control BMPs shall be removed from the project when no longer needed unless shown otherwise on the plans, the accepted SWMP, or directed or permitted by the Engineer. Removal of temporary controls shall be only after permanent controls are in place and functioning properly. The removal of all controls shall be followed by the immediate stabilization of the area as directed by the Engineer.

665.04 Method of Measurement.

(a) TEMPORARY SEEDING.

Temporary Seeding (Item 665-A) will be measured in acres {hectares} computed from surface measurements taken parallel to the treated surface. Computations will be to the nearest 0.1 of an acre {0.01 ha}.

(b) TEMPORARY MULCHING.

Temporary Mulching (Item 665-B) will be measured in units of tons {metric tons}. Proof of material weight shall be provided to the Engineer by the Contractor upon delivery of the materials to the project site. The weight ticket shall contain all items required in Subarticle 109.01(h)2. with the exception of the name of the producer and the truck number.

(c) TEMPORARY PIPE.

Temporary Pipe (Item 665-C) will be measured in linear feet {meters} to the nearest foot {0.1 m} with measurements taken along the center line of the pipe.

(d) POLYETHYLENE.

Polyethylene sheets (Item 665-E) will be measured in square yards {square meters} computed from surface measurements of the area treated. Computations will be to the nearest 0.1 square yard {0.1 square meter}.

(e) TEMPORARY EARTH BERMS.

Temporary Earth Berms (Item 665-T) will be measured in linear feet {meters} to the nearest foot {0.1 meter} with measurements taken along the top of the berm. Aggregate or polyethylene protection will be paid separately if directed or permitted by the Engineer. There will be no direct payment for berms not meeting requirements given in this Section or shown in the plans.

(f) TEMPORARY COARSE AGGREGATE.

Temporary Coarse Aggregate (Item 665-N) will be measured in units of tons {metric tons}.

(g) TEMPORARY RIPRAP.

Temporary Riprap (Item 665-I) will be measured in units of tons {metric tons}. Geotextile installed both as underlayment and as a choker for riprap ditch checks shall be measured separately and payment made in accordance with the requirements given in Section 610. If provided in the plans, stone used for choking shall be measured separately and paid in accordance with the appropriate pay item.

(h) HAY BALES.

Hay Bales (Item 665-F) will be measured per each bale unless used in Stage 4 Inlet Protection.

(i) SAND BAGS.

Sand Bags (Item 665-G) will be measured per each bag unless used in Stage 3 or 4 Inlet Protection.

(j) SILT FENCE AND SILT FENCE REMOVAL.

Silt Fence (Item 665-J) and Silt Fence Removal (Item 665-O) will be measured along the top of the fence fabric in linear feet {meters} to the nearest foot {0.1 m}.

(k) WATTLES.

Wattles (Item 665-Q) will be measured after installation in linear feet {meters} to the nearest 0.1 foot {0.01 meter} with measurements taken along the top of the wattle installation unless used in Stage 3 or 4 Inlet Protection. Wattles installed as sediment barriers or ditch checks shall have a diameter of 20 inches {500 mm} verified by measurement of the circumference anywhere along the length of the wattle which shall be at least 56 inches {1.42 m}. Payment for stacked wattles will be made at the contract price for a single 20 inch {500 mm} diameter wattle. Wattles installed as slope interrupters shall have a diameter of 9 inches {230 mm} verified by measurement of the circumference anywhere along the length of the wattle which shall be at least 25 inches {0.64 m}. Field measurements will be used to verify lengths shown on shipping documentation. The lesser of the two lengths will be used for payment. Geotextile installed as underlayment for wattle ditch checks shall be measured separately and payment made in accordance with the requirements given in Section 610.

(l) SILT DIKES.

Silt Dikes (Item 665-R) will be measured in linear feet {meters} to the nearest 0.1 foot {0.01 meter} with measurements taken along the top of the dike.

(m) BRUSH BARRIERS.

Brush Barriers (Item 665-S) will be measured in linear feet {meters} to the nearest foot {0.1 meter} with measurements taken along the top of the barrier. Geotextile installed both as

underlayment and as a choker will be measured separately and payment made in accordance with the requirements given in Section 610.

(n) INLET PROTECTION.

Materials used to construct Stage 1 and 2 Inlet Protection will be measured for payment as appropriate for items such as silt fence, wattles, hay bales, etc. This also applies to curb inlet protection necessary beyond Stage 2.

Stages 3 and 4 Inlet Protection (Item 665-P) for drop inlets will be measured per each stage of each inlet protected if protected in accordance with the details shown on the plans.

(o) DRAINAGE SUMP EXCAVATION.

Drainage Sump Excavation (Item 665-K) will be measured in cubic yards {cubic meters} computed from dimensions of the sump size and depth approved by the Engineer. Material removed during sump maintenance operations will be measured for payment as Drainage Sump Excavation to the nearest cubic yard {0.1 cubic meter}. No measurement will be made for material used as backfill when the sump is closed.

Removal of sediment collected by sedimentation basins, sediment retention barriers, ditch checks and inlet protection will be measured as drainage sump excavation if soil erosion is being prevented to the maximum extent practicable.

If the proposal does not contain this item, measurement and payment will be made under the Item of Unclassified Excavation. Material removed will not be paid as muck excavation regardless of the consistency.

(p) SEDIMENTATION BASINS.

Each component and work item required for the construction of a Sedimentation Basin will be measured individually for payment. Excavation and embankment will be measured as Unclassified Excavation. Removal of captured sediment will be measured as Drainage Sump Excavation. Typical items required to construct the sedimentation basin may include unclassified excavation, aggregates, riprap, filter fabric, polyethylene, flow baffles, rolled erosion control products, seeding, basin dewatering device, temporary pipe, etc. Access roads to sedimentation basins, as shown in the plans or as directed by the Engineer, will be measured separately and payment made as Temporary Coarse Aggregate (Item 665-N) and geotextile in accordance with the requirements given in Section 610, unless otherwise specified in the plans. No measurement will be made for access roads installed without the approval of the Engineer.

(q) FLOW BAFFLES.

Flow Baffles (Item 665-H) will be measured along the top of the baffle material in linear feet {meters} to the nearest foot {0.1 m}.

(r) BASIN DEWATERING DEVICES.

Basin Dewatering Devices (Item 665-X) will be measured per each. Elevated device rest, outlet pipes, valves, and end treatments serving the basin dewatering device are considered to be a part of the device and will not be measured separately for payment.

(s) TEMPORARY PIPE END TREATMENTS.

Temporary Pipe End Treatments (Item 665-D) will be measured per each.

(t) FLOATING BASIN BOOMS.

Floating Basin Booms (Item 665-L) will be measured in linear feet {meters} to the nearest 0.1 foot {0.01 meter} with measurements taken along the top line of the boom.

665.05 Basis of Payment.

(a) UNIT PRICE COVERAGE.

The unit price for all temporary erosion and sediment control items, except drainage sumps and silt fence, shall be full compensation for furnishing all materials unless otherwise noted, the

construction and installation of the materials into complete erosion or sediment control measures, and shall include all equipment, tools, labor and incidentals necessary to complete the work, to perform maintenance to keep work in an acceptable condition, and to remove the items when no longer needed as directed by the Engineer. The excavation of sediment collected by drainage sumps, ditch checks, sediment barriers and other sediment control BMPs will be considered for payment as Drainage Sump Excavation as long as erosion is being controlled to the maximum extent practicable. Direct payment will be made for the removal of silt fence.

Payment for Stage 3 and Stage 4 Inlet Protection shall include the installation and maintenance of all items at quantities shown on the plans as being required or permitted.

Payment for sedimentation basins will be made for individual components and work items required for construction and shall be full compensation for the installation, maintenance and removal of all components of the sedimentation basin as constructed in accordance with requirements shown on the plans. Payment for access roads to sedimentation basins will be made for individual components required for the construction and shall be full compensation for the installation, maintenance and removal when no longer needed as directed by the Engineer.

In the event that additional temporary or permanent erosion and sediment control measures become necessary due to the negligence or actions of the Contractor, or for the contractor's convenience the temporary work shall be performed at the Contractor's expense. Temporary or permanent erosion control measures installed in previously stabilized areas that are necessary due to required work sequencing will be paid as outlined in this section.

Payment will not be made for any temporary erosion or sediment control measures installed due to the methods chosen by the Contractor to perform the required work. Measures include those utilized for convenience, for access to the work (work bridges or platforms, stream crossings, access roads, haul roads), those utilized for treating or handling water in order to assist the Contractor in the execution of the work (diversions, dewatering, conveyances) or those utilized for protecting the Contractor's work or staging areas. Payment will also not be made for measures installed outside of the right of way or easements such as material pits, haul or access roads, plant sites, and staging areas.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

665-A Temporary Seeding - per acre {hectare}
665-B Temporary Mulching - per ton {metric ton}
665-C Temporary Pipe - per linear foot {meter}
665-D Temporary Pipe End Treatment – per each
665-E Polyethylene - per square yard {square meter}
665-F Hay Bales - per each
665-G Sand Bags - per each
665-H Flow Baffle – per linear foot {meter}
665-I Temporary Riprap, Class ____ - per ton {metric ton}
665-J Silt Fence - per linear foot {meter}
665-K Drainage Sump Excavation - per cubic yard {cubic meter}
665-L Floating Basin Boom - per linear foot {meter}
665-N Temporary Coarse Aggregate, ALDOT Number ____ - per ton {metric ton}
665-O Silt Fence Removal - per linear foot {meter}
665-P Inlet Protection, Stage 3 or 4 – per each
665-Q Wattle - per linear foot {meter}
665-R Silt Dike - per linear foot {meter}
665-S Brush Barrier - per linear foot {meter}
665-T Temporary Earth Berm - per linear foot {meter}
665-X Basin Dewatering Device – per each

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: December 4, 2014 Special Provision No. 12-0426(2)

EFFECTIVE DATE: January 1, 2015

SUBJECT: Liquidated Damages.

Alabama Standard Specifications, 2012 Edition, SECTION 108 shall be amended as follows:

SECTION 108
PROSECUTION AND PROGRESS

108.11 Schedule of Liquidated Damages.

This Article (108.11) shall be replaced by the following:

108.11 Schedule of Liquidated Damages.

Original Contract Amount		Liquidated Damages Daily Charge	
More Than	To and Including	Calendar Day or Fixed Date	Work Day
$ 0	$ 200,000	$ 300	$ 600
200,000	500,000	650	1300
500,000	1,000,000	1150	2300
1,000,000	2,000,000	1550	3100
2,000,000	----------	2000	4000

When the contract time is on the calendar day or date basis, the schedule for calendar days shall be used. When the contract time is on a work day basis, the schedule for work days shall be used.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: December 18, 2012 Special Provision No. 12-0521

EFFECTIVE DATE: March 1, 2013

SUBJECT: Definition of Terms.

Alabama Standard Specifications, 2012 Edition, SECTION 101 shall be revised as follows:

SECTION 101
DEFINITION OF TERMS

101.01 Definitions.
This Article (101.01) is revised by replacing the definition of "Engineer" with the following:

Engineer. A qualified Department staff member designated by the Director, acting either directly or through his authorized assistants or representatives, who is responsible for engineering supervision of construction activities.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: April 8, 2013 Special Provision No. 12-0599

EFFECTIVE DATE: June 1, 2013

SUBJECT: Asphalt Materials

Alabama Standard Specifications, 2012 Edition, shall be revised by replacing SECTION 405, SECTION 407, and SECTION 804 with the following:

SECTION 405
TACK COAT

405.01 Description.

The work under this Section shall cover the furnishing and placing of a bituminous tack coat on an existing surface which is to be covered by a bituminous plant mix material in accordance with these specifications and in reasonably close conformity with the lines shown on the plans or directed by the Engineer.

The work shall include the cleaning of the existing surface prior to application of the tack coat.

The area of treatment and the rate of application of a tack coat shall be based on the plans and specifications after evaluating the actual surface condition on which the plant mix overlay is to be placed.

405.02 Materials.

Bituminous material for tack coat shall be Emulsified Asphalt or one of the Performance Graded Asphalt Binders shown in Article 804.07. The cationic grades CRS-1h, CRS-2, CRS-2h, CMS-1hp, CSS-1, CSS-1h, CQS-1h, CQS-1hp, CRS-2p, CRS-2l, CNTT-1hs or the anionic grade NTSS-1HM shall be used. If Emulsified Asphalt is used, the emulsion shall not be diluted prior to application.

Unless shown otherwise on the plans, the contractor shall have the option of using any of the allowable bituminous materials, subject to other limitations of these specifications. In making the selection of materials, the Contractor shall take into consideration seasonal, weather, temperature, and other placement conditions, while keeping in mind that SS stands for slow setting, RS stands for rapid setting, and QS stands for quick setting (QS is the faster setting or breaking emulsion). Low temperatures and humid or damp conditions will retard the breaking or setting of all emulsions. The mixing of a cationic and an anionic emulsion will result in failure of emulsion materials.

All materials shall meet the requirements of Section 804.

405.03 Construction Requirements.

(a) EQUIPMENT.

In general it shall be the Contractor's responsibility to select the proper size and amount of equipment to provide the desired results. Equipment furnished shall meet the requirements of Subarticle 401.03(a).

(b) SEASONAL, NIGHTTIME, WEATHER, AND TEMPERATURE LIMITATIONS.

1. SEASONAL LIMITATIONS FOR THE PLACEMENT OF TACK.

Grades CSS-1, CSS-1h Emulsified Asphalts shall not be placed between the dates of October 1 and May 1 in North Alabama and between the dates of November 1 and April 1 in South Alabama regardless of weather conditions. For the purpose of identification, South Alabama shall be referred to for projects lying partly or wholly in the area of the State lying south of latitude 33 °N and with North Alabama encompassing the remaining or northern portion of the State. These seasonal limitations shall not apply to the placement of other bituminous materials for tack allowed by Article

405.02. The tack may be placed if allowed by the Engineer when the pavement temperature is 40°F and rising.

2. NIGHTTIME LIMITATIONS FOR THE PLACEMENT OF TACK.

Grade CSS-1 and CSS-1h Emulsified Asphalts shall not be used for tack during nighttime paving operations.

3. WEATHER LIMITATIONS FOR THE PLACEMENT OF TACK.

Tack material shall not be applied on a wet surface or when in the Engineer's opinion weather conditions are not suitable. NTSS-1HM may become slippery when wet.

4. TEMPERATURE LIMITATIONS FOR THE PLACEMENT OF TACK.

Temperature limitations for the placement of tack coat material shall be the same as specified in Subarticle 410.03(b) for plant mixed pavements. NTSS-1HM material shall not be used for cold applied asphalt pavement.

(c) PREPARATION OF EXISTING SURFACE.

Loose material, dust, dirt, and all foreign matter shall be removed from the surface to be treated. Approval of the surface before application of the tack material is required.

(d) APPLICATION.

Tack coat materials shall be applied in an amount from 0.05 gallons per square yard {0.25 L/m^2} up to a maximum of 0.10 gallons per square yard {0.5 L/m²} for emulsified asphalt and from 0.03 gallons per square yard {0.13 L/m^2} up to a maximum of 0.07 gallons per square yard {0.3 L/m²} for asphalt binder. When tacking new, freshly laid pavement, the Engineer may approve reducing the above minimum requirements.

Unless approved otherwise by the Engineer, the application temperature shall be 120 °F - 170 °F {50 °C - 75 °C} for Cationic Emulsified Asphalts, 150 °F – 180 °F {66 °C – 82 °C} for Anionic Emulsified Asphalts; and 275 °F – 350 °F {135 °C – 175 °C } for Performance Graded Asphalt Binders. The NTSS-1HM asphalt emulsion shall be covered as soon as practical.

An asphalt distributor shall be provided for use on all accessible areas; inaccessible areas such as around manholes, etc. may be coated by other approved methods.

When applying tack coat, it shall be applied to all contact surfaces of curbs, gutters and manholes. Tack shall also be applied to all adjacent pavement edges except the pavement edges where joint sealant is required. Adjacent surfaces, such as gutters and the like, that are not to be in contact with the mix shall be adequately protected from the spray by means of heavy paper securely fastened in place or other satisfactory means. Any such surface soiled by tack coat material shall be cleaned and restored to its previous condition without additional compensation.

Tack coat material shall be spread only far enough in advance to permit the construction to progress consistently, uniformly, and continuously after the curing period and shall not be applied so far in advance that the viscous quality will be reduced by traffic prior to construction thereon. Tack coat that loses its viscous quality before being covered shall be renewed and any which has been damaged shall be replaced without extra compensation.

405.04 Method of Measurement.

The amount of bituminous material used as directed for tack coat will be measured in gallons {liters}, as specified in Article 109.02.

405.05 Basis of Payment.

(a) UNIT PRICE COVERAGE.

The amount of bituminous material used as directed for tack coat, measured as noted above, will be paid for at the contract unit price bid per gallon {liter} which shall be full compensation for furnishing the bituminous material, hauling, heating, application, curing, and maintaining and for all equipment, tools, labor, and incidentals necessary to complete the work.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

405-A Tack Coat - per gallon {liter}

SECTION 407
JOINT SEALANT FOR HMA PAVEMENT

407.01 Description.

This Section shall cover the sealing of longitudinal joints in hot mix asphalt pavements by the spraying or rolling of joint sealant on the vertical face of the joint in front of the asphalt spreader. Joint sealant application shall be a separate construction operation from the tack coat application

Joint sealant shall not be applied to the joints between HMA pavement and paved shoulders unless shown otherwise on the plans. Joint sealant shall not be applied to the joints between HMA pavement and curbs unless shown otherwise on the plans.

407.02 Materials.

A sample of the sealant will be taken by the Engineer and tested in accordance with the requirements established by the Department for sampling and testing Bituminous Surface Treatments given in Section 401.

The Contractor shall have the option of using the following materials for the joint sealant:

- PG 64-22 performance graded asphalt binder;
- PG 67-22 performance graded asphalt binder
- CRS-1H emulsified asphalt
- CMS-1HP emulsified asphalt
- CQS-1HP emulsified asphalt;
- NTSS-1HM emulsified asphalt;
- Pavon™;
- Crafco™ Pavement Joint Adhesive Part No. 34524.

PG 64-22 shall meet the material requirements given in Table 2 of Section 804.

PG 67-22 shall meet the material requirements given in Table 3 of Section 804.

NTSS-1HM, CQS-1HP, CMS-1HP, and CRS-1H shall meet the requirements given in Table 5 of Section 804.

CQS-1HP shall be a cationic emulsion blended with a minimum of 1.2 % polymer meeting the requirements given in Article 811.03 and the requirements given in the following tables. Pavon™ is a proprietary product that shall also meet the requirements given in the following tables.

REQUIRED PROPERTIES FROM THE TESTING OF Pavon™			
Parameter	Test Method	Value	
Residue % By Distillation	ALDOT 415	60 % Min.	-
Viscosity, SF @ 77 °F, sec.	AASHTO T 59	20 SF Min.	100 SF Max.
Sieve Test, %	AASHTO T 59	-	0.1 % Max.
Particle Charge	AASHTO T 59	Positive	

REQUIRED PROPERTIES FROM THE TESTING OF DISTILLATION RESIDUE FROM Pavon™			
Parameter	Test Method	Value	
Penetration, 100 g, 5 secs. @ 77 °F	AASHTO T 49	60 mm Min.	130 mm Max.
Ductility, cms., @ 39.2 °F	AASHTO T-51	40 cms Min.	-
Elastic Recovery @ 50 °F, %	AASHTO T-301	50 % Min.	-

Crafco™ Pavement Joint Adhesive Part No. 34524 is a proprietary product that shall meet the requirements given in the following table.

REQUIRED PROPERTIES FROM THE TESTING OF Crafco™ PAVEMENT JOINT ADHESIVE PART NO. 34524		
Parameter	Test Method	Value
Cone Penetration, 77 ºF	ASTM D5329	60-100
Flow, 140 ºF	ASTM D5329	5 mm-Maximum
Resilience, 77 ºF	ASTM D5329	30 %-Minimum
Ductility, 77 ºF	AASHTO T51	30 cm-Minimum
Ductility, 39.2 ºF	AASHTO T51	30 cm-Minimum
Softening Point	AASHTO T53	170 ºF Minimum

407.03 Construction Requirements.

Unless shown otherwise on the plans, joint sealant shall only be applied to the joints in the wearing layers of Section 424 (Superpave) and Section 423 (Stone Matrix Asphalt) mixes and to the joints in the surface layers between existing HMA pavement and new HMA pavement. Joint sealant shall not be applied to the joints between HMA pavement and paved shoulders unless shown otherwise on the plans. Joint sealant shall not be applied to the joints between HMA pavement and curbs unless shown otherwise on the plans.

As a separate application from the tack coat, the sealant shall be applied by being sprayed or rolled on the face of the vertical joint of the previously placed asphalt layer in front of the asphalt spreader to seal the joint between the previously placed layer and the newly placed layer.

Joint sealant shall be placed at the rates and temperatures given in the following table.

JOINT SEALANT APPLICATION RATES AND TEMPERATURE		
Joint Sealant	Application Rate	Application Temperature
PG 64-22	24 gallons per mile per inch of lift with a +/-10 % tolerance	212 ºF to 230 ºF
PG 67-22	24 gallons per mile per inch of lift with a +/-10 % tolerance	275 ºF to 350 ºF
CRS-1h CMS-1HP	40 gallons per mile per inch of lift with a +/-10 % tolerance	120 °F to 170 °F
NTSS-1HM	40 gallons per mile per inch of lift with a +/-10 % tolerance	165 ºF to 170 ºF
CQS-1hp Pavon™	40 gallons per mile per inch of lift with a +/-10 % tolerance	Ambient Temperature
Crafco™ Pavement Joint Adhesive Part No. 34524	70 gallons per mile per inch of lift with a +/- 10 % tolerance	380 °F ± 20 °

The Engineer will limit the length of placement ahead of the spreader (usually no more than 1000 feet) to reduce the possibility of damage to the sealant. The Engineer will also require the placement of CQS-1HP emulsified asphalt, NTSS1HM emulsified asphalt, and Pavon™ far enough ahead of the asphalt spreader to allow the curing of the sealant.

407.04 Method of Measurement.

The application of joint sealant will be measured by the mile for each joint.

407.05 Basis of Payment.

(a) UNIT PRICE COVERAGE.

Joint sealant will be paid for at the contract unit price per mile for each joint which shall be full compensation for furnishing the joint sealant material, applying the sealant and for all equipment, tools, labor, and incidentals necessary to complete the work.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

407-B Joint Sealant for Hot Mix Asphalt Pavement - per mile

SECTION 804
ASPHALT MATERIALS

804.01 General.

The asphalt materials furnished shall be of approved quality and shall meet the requirements shown under its respective type in the following tables and referenced specifications for the kind of material furnished. For any contract, the material furnished shall show uniform test results. Where more than one grade of material is permitted for any item of work, the Engineer shall specify the grade . In all cases, the Engineer will specify the consistency limits for the grade of material shown on the plans and/or proposal. The Contractor may, without extra compensation, supply asphalt material containing approved additives for producing non-stripping characteristics. For such materials, an adjustment in the total asphalt requirements of this subdivision will be made as deemed necessary. Other additives shall not be added to the asphalt material unless expressly authorized in writing by the Materials and Tests Engineer. The use of any unauthorized additive will be cause for rejection of the asphalt material.

Sampling of tank cars, tank trucks, distributor trucks, or recirculating storage tanks shall be by the use of a sampling valve, as prescribed in Figure 3 of AASHTO T 40, installed in the tanks.

All products furnished for use shall be from an approved producer who is participating in and meeting the requirements of ALDOT-243, ACCEPTANCE PROGRAM FOR ASPHALT MATERIALS, and listed on List I-4, PRODUCERS OF ASPHALT PRODUCTS, of the Department's "Materials, Sources, and Devices With Special Acceptance Requirements" Manual. Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list.

804.02 Performance Graded Asphalt Binders (PGAB).

The material supplied under this Article shall be asphalt prepared by the refining of asphaltic petroleum. No air-blown or oxidized asphalt will be allowed. The refined asphalt binder shall be homogeneous, free of water and shall not foam when heated at 347 °F {175 °C}.

The PG 58-22, PG 64-22, and PG 76-22 binders shall conform to the requirements given in AASHTO M-320 as shown in Tables 1, 2 and 4 in Article 804.07. The PG 67-22 binder (not shown in AASHTO M-320) shall conform to the requirements given in AASHTO M-320 and the requirements given in Table 3 of Article 804.07.

Shipping temperature of the asphalt from the refinery shall not exceed 356 °F {180 °C} for unmodified binders. For polymer modified binders, shipping temperatures in excess of 356 °F {180 °C} may be allowed with the approval of the Materials and Tests Engineer. At the time of use, the asphalt temperature shall comply with the requirements of Item 401.03(d)2. or Subarticle 410.02(b) whichever is applicable.

804.03 Cutback Asphalt.

The materials supplied under this Article shall be made from liquid asphalt binder and naphtha solvent, so proportioned and mixed that the finished product shall be homogeneous and conform to the requirements of AASHTO M 81 for rapid curing cutback and AASHTO M 82 for medium curing cutback.

804.04 Emulsified Asphalt.

The materials supplied under this Article shall be homogeneous emulsification of asphalt and shall show no separation of asphalt or objectionable change in viscosity within three months after delivery. Separation at any time caused by freezing or contamination shall be cause for rejection. Emulsified asphalt shall conform to the requirements as shown in Asphalt Materials Table No. 5 in Article 804.07.

804.05 Emulsified Petroleum Resin.

The material supplied under this Article shall be a homogeneous emulsification of petroleum resin. The emulsified petroleum resin shall be supplied from the producer in the form in which it shall be placed. No dilution of the product will be allowed after the product has left the supplier’s facility. Emulsified petroleum resin shall conform to the requirements as shown in Asphalt Materials Table No. 6. in Article 804.07.

804.06 Blank.

804.07 Tables of Asphalt Materials.

(a) ASPHALT MATERIALS TABLE NUMBER 1, GRADE PG 58-22.

ASPHALT MATERIALS TABLE NO. 1 SPECIFICATIONS FOR PERFORMANCE GRADED ASPHALT BINDER		
Property	**Grade PG 58-22**	
	Specification	Test Method
Original Binder		
Flash Point Temperature	Minimum 230 °C	AASHTO T 48
Rotational Viscosity	Maximum 3 Pa•s @ 135 °C	AASHTO T 316
Dynamic Shear, G*/sin δ	Minimum 1.00 kPa @ 58 °C	AASHTO T 315
Rolling Thin Film Oven Residue (AASHTO T 240)		
Mass Loss (RTFO)	Maximum 1.00 %	AASHTO T 240
Dynamic Shear, G*/sin δ	Minimum 2.20 kPa @ 58 °C	AASHTO T 315
Pressure Aging Vessel Residue (AASHTO R 28)		
Dynamic Shear, G*•sin δ	Maximum 5000 kPa @ 22 °C	AASHTO T 315
Creep Stiffness, S	Maximum 300 MPa @ -12 °C	AASHTO T 313
m-value	Minimum 0.300 @ -12 °C	AASHTO T 313

(b) ASPHALT MATERIALS TABLE NUMBER 2, GRADE PG 64-22.

ASPHALT MATERIALS TABLE NO. 2 SPECIFICATIONS FOR PERFORMANCE GRADED ASPHALT BINDER		
Property	**Grade PG 64-22**	
	Specification	Test Method
Original Binder		
Flash Point Temperature	Minimum 230 °C	AASHTO T 48
Rotational Viscosity	Maximum 3 Pa•s @ 135 °C	AASHTO T 316
Dynamic Shear, G*/sin δ	Minimum 1.00 kPa @ 64°C	AASHTO T 315
Rolling Thin Film Oven Residue (AASHTO T 240)		
Mass Loss (RTFO)	Maximum 1.00 %	AASHTO T 240
Dynamic Shear, G*/sin δ	Minimum 2.20 kPa @ 64 °C	AASHTO T 315
Pressure Aging Vessel Residue (AASHTO R 28)		
Dynamic Shear, G*•sin δ	Maximum 5000 kPa @ 25 °C	AASHTO T 315
Creep Stiffness, S	Maximum 300 MPa @ -12 °C	AASHTO T 313
m-value	Minimum 0.300 @ -12 °C	AASHTO T 313

The binder shown in Table No. 2 shall be made by adding polymer to a refined grade of PG 58-22 or shall be blended from PG 76-22 using an ALDOT approved blending procedure at the refinery. Air blown and oxidized asphalt shall not be used.

All PG 64-22 shall contain a minimum of 1.5 %, by weight, polymer solids.

A sample and infrared scan (Fourier Transform Infrared, FTIR) using the ALDOT 408 test method to determine the styrene and butadiene peaks and polymer percentage at the appropriate polymer loading shall be submitted to the Materials and Tests Engineer for laboratory evaluation prior to use.

All polymers shall conform to Section 811 for polymer additives.

All Polymer Modified Asphalt Binder manufacturers shall submit the information required in Article 811.01 annually or upon request by the Department.

(c) ASPHALT MATERIALS TABLE NUMBER 3, GRADE PG 67-22.

ASPHALT MATERIALS TABLE NO. 3 SPECIFICATIONS FOR PERFORMANCE GRADED ASPHALT BINDERS (NOT SHOWN IN AASHTO M-320)		
Property	**Grade PG 67-22**	
	Specification	Test Method
Original Binder		
Flash Point Temperature	Minimum 230 °C	AASHTO T 48
Rotational Viscosity	Maximum 3 Pa•s @ 135 °C	AASHTO T 316
Dynamic Shear, G*/sin δ	Minimum 1.00 kPa @ 67 °C	AASHTO T 315
Rolling Thin Film Oven Residue (AASHTO T 240)		
Mass Loss (RTFO)	Maximum 1.00 %	AASHTO T 240
Dynamic Shear, G*/sin δ	Minimum 2.20 kPa @ 67 °C	AASHTO T 315
Pressure Aging Vessel Residue (AASHTO R 28)		
Dynamic Shear, G*•sin δ	Maximum 5000 kPa @ 26.5 °C	AASHTO T 315
Creep Stiffness, S	Maximum 300 MPa @ -12 °C	AASHTO T 313
m-value	Minimum 0.300 @ -12 °C	AASHTO T 313

(d) ASPHALT MATERIALS TABLE NUMBER 4, GRADE PG 76-22.

ASPHALT MATERIALS TABLE NO. 4 SPECIFICATIONS FOR PERFORMANCE GRADED ASPHALT BINDER		
Property	**Grade PG 76-22**	
	Specification	Test Method
Original Binder		
Flash Point Temperature	Minimum 230 °C	AASHTO T 48
Rotational Viscosity	Maximum 3 Pa•s @ 135 °C	AASHTO T 316
Dynamic Shear, G*/sin δ	Minimum 1.00 kPa @ 76°C	AASHTO T 315
Rolling Thin Film Oven Residue (AASHTO T 240)		
Mass Loss (RTFO)	Maximum 1.00 %	AASHTO T 240
Dynamic Shear, G*/sin δ	Minimum 2.20 kPa @ 76 °C	AASHTO T 315
Elastic Recovery	Minimum 50 %@ 10°C	AASHTO T 301[1]
Pressure Aging Vessel Residue (AASHTO R 28)		
Dynamic Shear, G*•sin δ	Maximum 5000 kPa @ 26.5 °C	AASHTO T 315
Creep Stiffness, S	Maximum 300 MPa @ -12 °C	AASHTO T 313
m-value	Minimum 0.300 @ -12 °C	AASHTO T 313
[1]The following exceptions shall be made to the requirements given in AASHTO T 301: The statement given in Section 4.5 that reads "Attach the clips to the pins or hooks of the force adapter and the testing machine..." shall be disregarded. The mold shall be in accordance with the requirements given in ASTM D 6084 with dimensions noted in this method. All Elastic Recovery failures will be subject to FTIR scans for acceptability.		

All binders used in Table 4 shall be made by the addition of polymer to refined grades of PG 67-22 without using air blown or oxidized asphalt.

All PG 76-22 shall contain a minimum of 2.5 %, by weight, polymer solids.

A sample and infrared scan (Fourier Transform Infrared, FTIR) using the ALDOT 408 test method to determine the styrene and butadiene peaks along with the percentage of polymer added at the appropriate polymer loading shall be submitted to the Materials and Tests Engineer for laboratory evaluation prior to use. All polymers shall conform to Section 811 for polymer additives.

All Polymer Modified Asphalt Binder manufacturers shall submit the information required in Article 811.01 annually or upon request by the Department.

(f) ASPHALT MATERIALS TABLE NUMBER 5, EMULSIFIED ASPHALTS.

ASPHALT MATERIALS TABLE NO. 5
SPECIFICATIONS FOR EMULSIFIED ASPHALTS

	VISCOSITY GRADE								
	NTSS-1HM Min-Max	CMS-2, CMS-2h, CSS-1, CSS-1h, CRS-2 CRS-2p* CRS-2l*	AE-P Min-Max	CMS-1hp Min-Max	CRS-1h Min-Max	CRS-2h CRS-2hp* Min-Max	CQS-1h CQS-1hp* Min-Max	CNTT-1hs Min-Max	AASHTO TESTS
AASHTO M 208		Meet							T 59
Elastic Recovery Minimum 50 % @ 50°F {10°C}	- -	50 % for CRS-2p and CRS-2l	- -	50%		50% for CRS-2hp	50% for CQS-1hp	- -	T 301 **
Viscosity, Saybolt Furol: @ 77 °F {25 °C}, Sec @ 122 °F {50 °C}, Sec	25 500 - -	- - - -	10 50 - - - -	30 400 - - - -	 15-100	 200 500	20 150 - - - -	0 100	T 59 T 59 *See Note #4
Settlement, 5 days, %	- - 5	- -	- - 5		- - - -	- - - -	- - - -		T 59
Storage Stability Test 24 hr., %	- - 1.0	- -	- - - -	- - 1.0	- - 1.0	- - 1.0	- - 1.0	1.0	T 59
Demulsibility, 35 m/0.8% Sod. Dioctyl Sulfosucinate, %	- -	- -	- - - -	- -	- - -	60 - -	- - - -	- - - -	T 59
Classification Test	- -	- -	- - - -	- - - -		Passes	- - - -		T 59
Particle Charge	Negative	- -	- - - -	Positive	Positive	Positive	Positive	Positive	T 59
Sieve Test, %	- -	- -	- - 0.1	- - 0.10	- - 0.10	- - 0.10	- - 0.10	0.10	T 59
Distillation: Oil Distillate or Naphtha, by Volume of Emulsion, % Residue by Distillation, %	 - - 1.0 35 - -	 - - - -	 - - 12 45 - -	 - - 3.0 50 - -	 - - 3.0 55 - -	 - - 3.0 65 - -	 - - - - 60 - -	 3.0 50 - -	 T 59 T 59
Stone Coating Test, % Coated	- -	- -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	See Note #1
Modified Sand Coating	- -	- -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	See Note #2
Tests on Residue from Distillation: Float Test @ 140 °F {60 °C}, Sec. Solubility in CLCH:CCL2, % Ductility @ 77 °F {25 °C}, cm Ash, % by Mass Specific Gravity, 77 °F/ 77 °F {25 °C/25 °C} Softening Point Penetration 77 °F {25 °C}, 100 g. 5s	 - - - - - - - - - - 65ºC -- -- 20	 - - - - - - - - - - - - - -	 20 - - 97.5 - 20	 40°C - 45-90	 49°C -- 40 90	 - - - - 97.5 - - 60 - - - - - - - - - - - - - - - - - - 70 100	 - - - - 97.5 - - 40 - - - - - - - - - - - - - - - - - - 60 110	 - - - - - - - - - - 49°C -- 40 90	See Note #3 T 44 T 51 T 111 T 228 T 53 T 49

* All CRS-2p, CRS-2hp, CRS-2l, and CQS-1hp shall contain a minimum of 3.0 % polymer by volume. CRS-2p shall meet the requirements given in AASHTO M 316 with the exception of polymer content. All polymers shall conform to the requirements given in Section 811. All Elastic Recovery failures will be subject to FTIR scans for acceptability.

** The following exceptions shall be made to the requirements given in AASHTO 301: The statement given in Section 4.5 that reads "Attach the clips to the pins or hooks of the force adapter and the testing machine..." shall be disregarded. The mold shall be in accordance with the requirements given in ASTM D 6084 with dimensions noted in this method.

NOTES TO ASPHALT MATERIALS TABLE NO. 5.

NOTE #1. Stone Coating Test.

Use AASHTO T 59, Coating Test, except the mixture of stone and asphalt emulsion shall be mixed vigorously for five minutes and then immediately drenched with approximately twice its own volume of tap water at room temperature after which the aggregate shall be at least 90 percent coated with an asphalt film.

NOTE #2. Modified Sand Coating Test.

Use AASHTO T 59, Coating Test, except a mixture of air-dry test aggregate and asphalt emulsion shall be mixed thoroughly for five minutes then allowed to stand for five hours, after which the mixture shall be capable of being mixed for an additional five minutes. The mixture shall then be drenched with approximately twice its own volume of tap water at room temperature without showing more than 10 percent loss of bituminous film. The test aggregate for use in this test shall be a combination of 90 percent concrete sand and 10 percent Portland cement. The amount of asphalt emulsion used shall be 10 percent by weight {mass} of the aggregate.

NOTE #3. Float Test.

Use AASHTO T 50, with the exception that the residue shall be allowed to cool to room temperature and re-melted at lowest possible temperature that will bring it to a sufficiently fluid condition for easy pouring. Then pour into the collar for completion of the float test.

NOTE #4. Viscosity Test.

If the Viscosity Test begins to drip at 122 °F {50 °C} test temperature, the test shall be repeated at 160 °F {70 °C}. The Viscosity at 160 °F {70 °C} shall not exceed 200 seconds.

(g) ASPHALT MATERIALS TABLE NUMBER 6, EMULSIFIED PETROLEUM RESIN.

ASPHALT MATERIALS TABLE NO. 6
SPECIFICATIONS FOR EMULSIFIED PETROLEUM RESIN

	RESULTS		TEST METHODS	
TESTS	Minimum	Maximum	ASTM	AASHTO
Particle Charge Test	Positive		D 244	T 59
Residue, % * (Residue contains 5% Asphalt)	60	--	D 244	T 59
Sieve Test, % **	--	0.1	D 244	T 59
Viscosity, @ 77 °F {25 °C}, SFS	14	60	D 244	T 59
Tests on Residue:				
Flash Point, COC (°F)	210	---	D 92	T 48
Viscosity at 140 °F {60 °C} (cST)	190	450	D 2170	T 201

* ASTM D 244 Evaporation Test for percent of residue is modified by heating 50 gram sample to 149 °C until foaming ceases, then cooling immediately and calculating results.

** Test procedure identical with ASTM except that distilled water shall be used in place of 2% sodium oleate solution.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: March 14, 2013 Special Provision No. 12-0604

EFFECTIVE DATE: July 1, 2013

SUBJECT: Extension of Contract Time.

Alabama Standard Specifications, 2012 Edition, SECTION 108 shall be amended as follows:

SECTION 108
PROSECUTION AND PROGRESS

108.09 Extension of Contract Time.

(a) GENERAL.

This Subarticle [108.09(a)] shall be replaced by the following:

(a) GENERAL.

An extension of contract time will be granted in the event the total cost of the completed work exceeds the total contract bid price. For the purpose of this item, the following costs will be excluded from the computation for total cost:

- supplemental agreements, regardless of whether or not time extensions are allowed on the agreements ;
- bituminous material price adjustments;
- adjustments due to the cost of construction fuel for HMA production;
- liquidated damages;
- incentive or disincentive payments;
- price adjustments for pavement rideability;
- compensation for delay claims.

The extension of contract time shall be in the same ratio as the increase in the total cost.

If the Contractor finds it impossible for reasons beyond his control to complete the work within the contract time as specified or as extended in accordance with the provisions of this Article, he may at any time prior to the expiration of the contract time as extended, make a written request to the Engineer for an extension of time setting forth therein the reasons which he believes will justify the granting of his request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify. The extended time for completion shall then be in full force and effect the same as though it were the original time for completion. If the Contractor disagrees with the decision of the Engineer, he may appeal directly, in writing, to the Director. The Director shall have final authority to approve or disapprove the request for an extension of time. The Director may, at his discretion, refer the appeal to the Claims Committee for a recommendation before making his decision. Reference is made to Section 110, Claims. Time extension requests will not be referred to the Claims Appeal Board.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: March 18, 2013 Special Provision No. 12-0607

EFFECTIVE DATE: July 1, 2013

SUBJECT: Contractor's Advertisement of Completion.

Alabama Standard Specifications, 2012 Edition, SECTION 105 shall be amended as follows:

SECTION 105
CONTROL OF WORK

105.15 Acceptance.

(c) FINAL ACCEPTANCE.

5. CONTRACTOR'S ADVERTISEMENT OF COMPLETION.

This Item [105.15(c)5] shall be replaced by the following:

5. CONTRACTOR'S ADVERTISEMENT OF COMPLETION.

The Contractor, immediately after receiving Notice of Acceptance for Maintenance, shall give notice of said completion by an advertisement for a period of four successive weeks in some newspaper in general circulation published within the county in which the project is located. If the project is located in more than one county, an advertisement shall be given in a newspaper of general circulation published within each county in which the project is located. Proof of publication of said notice shall be made by the Contractor to the Director, by affidavit of the publisher. If a newspaper is not published in a county where work is done, the notice may be given by posting at the Court House for 30 days and proof of same shall be made by the Probate Judge or Sheriff and the Contractor.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: June 18, 2013 Special Provision No. 12-0676

EFFECTIVE DATE: September 1, 2013

SUBJECT: Structural Portland Cement Concrete.

Alabama Standard Specifications, 2012 Edition, shall be modified by replacing SECTION 501 and SECTION 815 with the following:

SECTION 501
STRUCTURAL PORTLAND CEMENT CONCRETE

501.01 Description.

The work under this Section shall cover the furnishing of portland cement concrete to be used in constructing concrete structures. Structures shall include but are not limited to bridges of all types, box culverts, headwalls, retaining walls, and other miscellaneous structures.

501.02 Materials.

(a) GENERAL.

Handling, storage, and control of materials shall comply with appropriate portions of Section 106. All materials shall conform to the requirements set forth in Division 800, Materials. Specific reference is made to applicable portions of the following Sections:

Section 801 - Coarse Aggregate
Section 802 - Fine Aggregates
Section 806 - Mineral Admixtures
Section 807 - Water
Section 808 - Air Entraining Admixtures for Concrete
Section 809 - Chemical Admixtures for Concrete
Section 815 - Cement
Section 830 - Concrete Curing Material
Section 832 - Concrete Joint Fillers, Sealers and Waterstop Material
Section 835 - Steel Reinforcement

(b) SPECIAL REQUIREMENTS.

Aggregates from different sources, which are to be used for concrete Class A and Class C as specified in Item 501.02(c)2, may be stockpiled together provided material from each source meets the requirements of Section 801 and the specific gravity of the aggregates from each source does not vary more than plus or minus 0.05.

In the event the coarse aggregate shows a tendency to segregate in the stockpile, the Engineer may order the coarse aggregate be furnished and batched in two fractions from two separate stockpiles.

The Contractor may be required to adjust the size of coarse aggregate for the concrete used around steel reinforcement of heavily reinforced members.

(c) PROPORTIONING MATERIALS.

1. MIXTURE DESIGN.

The Contractor's concrete producer shall establish the proportion of materials for each class of concrete following the guidelines described in ALDOT-170, "Method of Controlling Concrete Operations for Structural Portland Cement Concrete". It shall be the responsibility of the concrete producer to request approval of concrete mixture design(s) for use in Department's projects. The Contractor shall submit the proposed concrete mixture no later than 65 Calendar Days after the date of

Notice to Proceed. The Department shall be allowed 28 Calendar Days to complete the review and approval of the concrete mixture.

2. PREQUALIFICATION REQUIREMENTS FOR CONCRETE MIXTURE DESIGN.

PREQUALIFICATION REQUIREMENTS FOR CONCRETE MIXTURE DESIGN				
Concrete Class	Class A	Class B	Class C	Class D
Minimum 28-Day Compressive Strength (psi) {Mpa}	3,000 {21}	4,000 {28}	3,000 {21}	3,000 {21}
Maximum Water/Cementitious Materials Ratio	0.50	0.45	0.55	0.45
Range of Total Air Content (%)	2.5 – 6.0	2.5 – 6.0	2.5 – 6.0	2.5 – 6.0
Slump (in) {mm}	3.0 {75}	3.5 {90}	3.0 {75}	7.0 {180}
Maximum 28-Day Drying Shrinkage (%)	--	0.04	--	--
Largest Nominal Maximum Aggregate Size (in) {mm}	1.0 {25}	1.0 {25}	1.0 {25}	1.0 {25}
Notes	1, 4	1, 4, 5	1, 4	1, 2, 3, 4

The following notes are applicable to the table of PREQUALIFICATION REQUIREMENTS FOR CONCRETE MIXTURE DESIGN:

Note 1. Concrete mixtures used in marine environment, within 10 miles {16 kilometers} from coastline, completely or partially submerged in seawater, located within the tidal and splash zones, exposed to seawater spray, exposed to brackish water, or as shown on the plans shall have a maximum permeability of 2,000 coulombs and shall include mineral admixtures

Note 2. Seal concrete placed as an integral part of a bridge support system shall have Type II cement. Class "F" fly ash and/or ground granulated blast furnace slag shall be used as a substitute for a portion of the required Type II cement. The minimum substitution rate shall be 20 % for fly ash and 25 % for ground granulated blast furnace slag.

Note 3. Anti-washout admixtures shall be used when placing these mixtures through water.

Note 4. Coarse and fine aggregate gradations used shall meet the gradation requirements given in Section 801 and Section 802. Optimized gradations that do not meet the gradation requirements given in Section 801 and Section 802 shall be submitted to the Materials and Tests Engineer for approval prior to use.

Note 5. The Contactor may submit either proportions for a mixture design meeting the requirements above (including required shrinkage testing data and, if required, permeability testing data), or the following mixture design, adjusted for differences in specific gravity, without shrinkage or permeability testing data until September 15, 2015 at which time this waiver shall expire.

Cementitious content (lbs) {kg}: 620 {368}
Maximum water content (gallons) {liters}: 33 {163}
Fine aggregate (lbs) {kg}: 1097 {651}, where specific gravity = 2.65
Coarse aggregate (lbs) {kg}: 1857 {1102}, where specific gravity = 2.60

3. CLASS OF CONCRETE REQUIRED FOR SPECIFIC STRUCTURES.

Class A - Bridge substructure concrete, box culverts, retaining walls, concrete safety barriers, headwalls, and inlets.

Class B – Bridge superstructure concrete.

Class C - Machine laid curbs, gutters, combination curbs and gutters, slope paving, and miscellaneous concrete units..

Class D - Underwater concrete.

4. SUBSTITUTION OF HIGHER STRENGTH CONCRETE AND AGGREGATE REQUIREMENTS.

Substitution of a higher strength mixture for one of a lower strength may be permitted provided all the prequalification requirements of the higher strength mixture are met and the proposed substitution is requested and approved in writing.

If requested in writing and approved by the Materials and Tests Engineer, the use of No. 357 or No. 467 aggregates may be permitted in Class D mixtures.

5. MIXTURE DESIGN PREQUALIFICATION TESTS.

For concrete mixtures using portland cement only, the concrete producer shall submit data showing that the total alkali contribution from the cement in the concrete does not exceed 4.00 lb/yd^3 when calculated as follows:

$$lb\ of\ alkali\ per\ Yd^3 = \frac{(lb\ of\ cement\ per\ Yd^3) \times (\%\ Na_2O\ equivalent\ in\ cement)}{100}$$

Permeability tests shall be performed in accordance with the requirements given in AASHTO T 277, "Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration", using a moist-curing period of 56 days.

The 28-day shrinkage test shall be performed in accordance with the requirements given in AASHTO T 160, "Length Change of Hardened Hydraulic Cement Mortar and Concrete", using concrete prisms exposed to drying at a concrete age of 7 days. Three concrete prisms that are 3 x 3 x 11.25 inches {75 x 75 x 286 mm} in size shall be used. The initial reading for drying shrinkage calculations shall be the reading taken at the start of drying at a concrete age of 7 days ± 0.5 hours.

Compressive strength testing shall be performed in accordance with the requirements given in AASHTO T 22, "Compressive Strength of Cylindrical Concrete Specimens", using 6 x 12 inch {152 x 305 mm} cylinders.

Total air content shall be performed in accordance with the requirements given in AASHTO T 152, "Air Content of Freshly Mixed Concrete by the Pressure Method", using a Type "B" meter.

Slump test shall be performed in accordance with the requirements given in AASHTO T 119, "Slump of Hydraulic Cement Concrete".

6. CHEMICAL ADMIXTURES FOR CONCRETE.

Any chemical admixture used in the concrete mixture shall be included in the mixture design proposal. Only approved chemical admixtures listed in List II-1, "Chemical Admixtures for Portland Cement Concrete", of the MSDSAR manual shall be used in Department concrete mixtures. The dosage of chemical admixtures may be adjusted in the field to obtain the desired results, provided the manufacturer's recommended dosage is not exceeded. The use of calcium chloride will not be permitted.

7. AIR-ENTRAINING ADMIXTURES FOR CONCRETE.

Approved air entraining admixtures are listed in the MSDSAR manual, List II-1, "Chemical Admixtures for Portland Cement Concrete". The total air content shall be within the range of 2.5% to 6.0 % at the point of delivery.

Air content less than 2.5 % will be acceptable for structures that are completely embedded below the ground line or mud line.

The total air content of freshly mixed concrete shall be measured in accordance with the requirements given in AASHTO T 152 using a Type "B" pressure meter. All pressure meters used for measuring the total air content shall be calibrated prior to the beginning of concrete placement. The calibration of pressure meters shall be verified at least twice a week and anytime a questionable result is obtained.

8. MINERAL ADMIXTURES FOR CONCRETE.

Mineral admixtures may be used in any mixture design except where noted to be prohibited elsewhere. Substitution percentages are calculated by weight.

The maximum substitution of portland cement with mineral admixtures shall not exceed 50 percent. The following table shows the maximum substitution of portland cement with any one mineral admixture substitution.

MAXIMUM PERCENT MINERAL ADMIXTURE SUBSTITUTION FOR PORTLAND CEMENT (substitution by weight)	
MINERAL ADMIXTURE	PERCENTAGE SUBSTITUTION
Class C or Class F Fly Ash (See Note 1)	30 %

Ground Granulated Blast Furnace Slag (See Note 2)	50 %
Microsilica	10 %

Notes to the table of MAXIMUM PERCENT MINERAL ADMIXTURE SUBSTITUTION FOR PORTLAND CEMENT:

Note 1. Class "F" fly ash shall be used when fly ash is required to reduce the heat of hydration of mass concrete.

Note 2. The maximum substitution rate shall be twenty-five percent by weight {mass} when the ambient temperature is 45 °F or below.

9. SLUMP.

The Engineer may accept any concrete mixture delivered to the field with a slump less than the specified slump if the concrete mixture is workable.

A tolerance of plus 1.0 inches {25 mm} will be acceptable for the mixture delivered at the work site.

Approved Type "F", chemical admixtures may be used to chemically increase the slump of the concrete mixture from the maximum slump specified to a maximum slump of 6.0 inches {150 mm} for Class A, Class B, and Class C concrete. The plus 1.0 in {25 mm} tolerance will not be allowed when Type "F" chemical admixtures are used.

In no case shall the water to total cementitious material ratio specified be exceeded in order to increase the slump and/or adjust the mixture.

Slump shall be measured in accordance with the requirements given in AASHTO-T-119.

10. CONCRETE PRODUCTION.

During the progress of the work, the relative proportions between the fine and coarse aggregates, and between aggregate and water, may be varied as needed for best results, but the water to total cementitious material ratio shall not be changed except as noted below:

If it is impossible to produce concrete having the desired consistency the total amount of cementitious material may be increased to achieve the desired consistency provided that the maximum water to total cementitious material ratio is not exceeded and there is no additional cost to the Department.

If the Engineer finds it advisable to increase the minimum design strength of the concrete and orders the cementitious factor increased, the State will reimburse the Contractor for the actual amount only of the additional cementitious material used, based on actual f.o.b. destination, with the additional quantity calculated from the theoretical cementitious factor determined by the Engineer and not from count of bags or weight {mass} used.

The concrete mixture designs shall use Type I, II, or Type I/II portland cement unless otherwise specified. The Contractor may, for his own convenience and without additional compensation, substitute Type III portland cement, provided prior approval is given by the Materials and Tests Engineer.

It shall be the Contractor's responsibility to carry out uniform construction practices, which will produce concrete with the specified plastic concrete properties and of not less than the minimum specified compressive strength. Concrete with compressive strength below the minimum specified compressive strength will be investigated in accordance with ALDOT-170 prior to repairing or removing the affected concrete. Should low compressive strength occur consistently, the Materials and Tests Engineer may order such corrective action as deemed necessary, all without additional cost to the Department.

Where the conditions require the use of low tricalcium aluminate cement, the plans or proposal will designate Type II portland cement. In such case, if requested and approved in writing, Type I or Type I/II portland cement containing a maximum of eight percent tricalcium aluminate may be used. Should Type III portland cement be permitted, a maximum of eight percent tricalcium aluminate shall still apply.

(d) SAMPLING AND INSPECTION.

Production of required aggregate gradation in the concrete mixture shall be the Contractor's responsibility.

Cement, aggregates, water, and chemical and mineral admixtures shall be accepted on the basis of requirements currently listed in the Department's Testing Manual.

The Department reserves the right to take samples of aggregates from stockpiles, cementitious materials from storage bins, and chemical admixtures from storage tanks at the mixing or

batching plant and to make further tests as needed as the basis for continued acceptance of the materials.

The Contractor shall furnish, without extra compensation, samples of the materials and the concrete mixture for making tests and test specimens as required to comply with the Department's Testing Manual. Additional testing may be required if deemed necessary by the Engineer.

The Contractor shall furnish, without extra compensation, a protected environment for all concrete test cylinders produced incidental to any placement of concrete. This shall be accomplished by supplying a cylinder curing box with a minimum capacity of 22 test cylinders 6" X 12" {150 mm X 300 mm} in size, equipped with heating/cooling capabilities, automatic temperature control, and a maximum/minimum (high/low) temperature readout. The protective environment shall be capable of protecting all specimens within the following specification requirements and it shall be available at each site when concrete is placed and then maintained until such time that all specimens have been transported from the project to the testing facility. The Engineer, prior to beginning any concrete placement, shall approve each protective environment.

Immediately after being struck off, the concrete test specimens shall be moved to the protective environment where they shall remain for an initial curing period of not less than 24 hours or more than 48 hours. During the initial curing period, the specimens shall be stored in a moist environment at a temperature range between 60 ºF to 80 ºF {16 ºC to 27 ºC}, preventing any loss of moisture for up to 48 hours. At all times the temperature in and between concrete specimens shall be controlled by shielding the specimens from cooling/heating devices and direct rays of the sun.

A temperature record of the specimens shall be established by means of maximum/minimum (high/low) thermometers supplied by the Contractor. Only plastic molds shall be used for concrete specimens to be immersed in water.

Concrete specimens that are to be transported to the laboratory for standard curing within 48 hours shall remain in the molds in a moist environment, until they are received in the laboratory, removed from molds, and placed in standard curing.

Concrete specimens that are not transported to the laboratory for standard curing within 48 hours shall be removed from the molds within 24 ± 8 hours and standard curing used until transported to the laboratory. During the standard curing period, the specimens shall be stored at a temperature of 73 ± 3 ºF {23 ± 2 ºC} using the cylinder curing box defined above. Standard curing shall comply with AASHTO T 23 “Making and Curing Concrete Test Specimens in the Field”, Standard Curing section.

501.03 Construction Requirements.

(a) GENERAL.

All materials, labor, equipment, tools, and machinery necessary for forming, mixing, placing, finishing, and curing shall be available as required and all necessary equipment for the proper construction and completion of any section of the work shall be in satisfactory working condition before the Contractor will be permitted to start placing concrete.

All concrete batching plants supplying concrete shall be on List I-7, "Portland Cement Concrete Producers", of the MSDSAR manual. The concrete producer shall submit a valid BMT-75 and proof of NRMCA certification to the Division Materials Engineer prior to batching concrete.

All batching plants shall meet the requirements of the Specifications and ALDOT-352. Producers who request that their batching plants be placed on the list of evaluated ready-mix concrete plants will be charged a fee as specified by ALDOT-355, "General Information Concerning Materials, Sources, and Devices With Special Acceptance Requirements".

(b) EQUIPMENT.

1. GENERAL.

The Contractor shall furnish equipment capable of producing concrete meeting the requirements noted in this Section in sufficient quantities to provide for orderly construction of the project. All equipment must be in good working order and so maintained throughout the requirement for its use.

Specific requirements for certain types of equipment are designated in subsequent items of this Subarticle.

2. MIXING AND TRANSPORTING EQUIPMENT.

Concrete for all major structure work (bridges, culverts, retaining walls, etc.) shall be "ready-mixed" concrete. Ready-mixed concrete is defined as portland cement concrete manufactured for delivery and delivered to the work site in accordance with AASHTO M 157 “Ready-Mixed Concrete”

Modified* and the requirements written herein in other parts of these specifications. In case of discrepancy these specifications shall govern.

*Modification of AASHTO M 157 is as follows:

The requirements of Paragraph 8.1 shall include the following: Should this method of measuring fly ash or other cementitious materials cumulatively with cement produce unsatisfactory results, it shall be discontinued and separate scales and hoppers provided for these ingredients.

Concrete for minor structure work (headwalls, inlets, junction boxes, and other miscellaneous individual concrete units requiring three cubic yards {3 cubic meters} or less of concrete, along with such items as slope paving, sidewalks, curbs, gutters, and combinations thereof) may be mixed in mixers as noted above or an approved type of mobile mixing plant designed with separate bins for fine aggregate, coarse aggregate, cement, water, additives, etc. that will automatically proportion all concrete aggregates either by weight {mass} or volume and be capable of combining the ingredients into a uniform mass and discharging such without segregation. It shall have approved equipment that will determine the volume of concrete dispatched. Said alternate type mobile mixing plant shall be capable of providing concrete complying with the mixture design requirements noted in Article 501.02. Prior written approval of such alternate equipment shall be obtained before it is allowed on the project. Basis for this approval will be upon the satisfactory performance of the equipment when checked in accordance with the provisions of AASHTO M 241 "Concrete Made by Volumetric Batching and Continuous Mixing". The costs of all materials and labor furnished to perform the above mentioned test shall be absorbed by the Contractor,

If the Contractor requests to use portable concrete mixers equal or less than 15 cubic feet {0.5 cubic meter}, the Materials and Tests Engineer may approve their use and will furnish written requirements covering such mixers.

All mixing and transporting equipment shall be supplied in sufficient amounts to provide continuous delivery of the concrete as needed for an acceptable, satisfactory operation. The volume of concrete mixed or transported in a concrete truck mixer shall not be less than 15% of the gross volume of the drum.

Concrete transit mixers shall be equipped with an approved in line water-metering device capable of accurately measuring the amount of water discharged into the load to within ±1% of the required amount. The metering device shall be approved by the Materials and Tests Engineer. The precision of the water-metering device shall be verified as per ALDOT-407, "Calibration Verification of Truck Mounted Water Meters". In lieu of the in-line water meter, a calibrated 5 gallon {20 liter} bucket, may be used to measure the amount of water discharged into the concrete. Concrete producers using this alternative method shall submit the 5 gallon {20 liter} buckets to the Division Materials Engineer for calibration verification. Metering devices not meeting the stated accuracy shall not be used. Concrete transit mixers without approved water-metering devices shall not be used on Department projects.

Each transit mixer shall be equipped with an approved automatic counter that will record the number of drum revolutions regardless of the drum speed.

3. VIBRATORS.

Vibrators shall be of an approved internal vibrating type and design, unless the Engineer gives special authorization for other types. Vibrators shall be capable of transmitting vibrations to the concrete at frequencies of not less than 4500 impulses per minute. The Contractor shall provide a sufficient number of vibrators to properly compact each batch immediately after it is placed in the forms. At least one standby vibrating unit in workable order shall be available before the start of any placement of concrete.

(c) ADDITION OF WATER AT JOBSITE.

The addition of water to concrete delivered at the job site will be allowed only for the following two cases:

1. ON ARRIVAL OF THE TRUCK TO THE JOBSITE.

After sampling the fresh concrete as per ALDOT-328, "Rapid Method of Sampling Fresh Concrete from Revolving Drum Truck Mixers or Agitators", and testing its consistency if the slump test shows that the concrete mixture is too dry, water may be added prior to discharging any more concrete from the truck mixer and without exceeding the water-cementitious ratio and the specified slump.

2. AFTER PART OF THE LOAD HAS BEEN DISCHARGED.

The water shall be added only if the following three conditions are met. (1) A bucket holding a known volume of concrete is used during the placement operation. (2) The amount of water

available can be prorated to the known amount of concrete in the truck mixer. (3) The water-cementitious ratio is not exceeded.

Tests for slump, total air content, temperature, and compressive strength shall be run after the addition of water at the jobsite regardless of any previous testing.

(d) TIME, LIGHT AND WEATHER LIMITATIONS.

1. TIME OF HAULING AND PLACING CONCRETE.

The delivery and placement of ready-mixed concrete shall be completed within the time frames listed in the following table. These times are measured from the time at which water is added to the cement until the time at which placement of the load is completed.

TIME LIMITATIONS FOR THE DELIVERY AND PLACMENT OF CONCRETE		
Temperature of the Concrete	Mixtures without Retarding Admixtures	Mixtures with Retarding Admixtures
Less than 85 ºF {30 ºC}	1 Hour	1 Hour and 45 Minutes
85 ºF {30 ºC} or More	45 Minutes	1 Hour and 15 Minutes

If Type III portland cement is used, the time limits shall be reduced by 15 minutes. If requested, and approved in writing by the Materials and Tests Engineer, a hydration stabilizer can be used to extend the retardation of set time of concrete.

The Materials and Tests Engineer may permit mixing and the adding of the cement and additives at the work site in truck mixers, in order to meet the time limitation requirements.

When a ready-mixed truck is used for concrete delivery, the concrete shall be completely discharged from the mixing drum before the truck mixer has completed 300 revolutions and or before the above time limitations for placement have been exceeded; whichever happens first.

2. LIGHT.

All concrete shall be placed and finished during daylight hours, unless written permission to the contrary is given. Such permission will not be given unless an adequate approved lighting system is available for all operations after sundown.

3. WEATHER.

a. General.

The temperature of the concrete, at the time of placing in the forms shall not be less than 50 °F {10 °C} nor more than 95 °F {35 °C}, except that for bridge deck slabs the temperature of the concrete at the time of placing shall not be more than 90 ºF {32 ºC }, unless otherwise provided or directed.

b. Cold Weather Operations.

No concrete shall be placed when the ambient air temperature is below 40 °F {5 °C} without written permission of the Engineer. If the Contractor proposes to place concrete during seasons when there is a probability of temperatures lower than 40 °F {5 °C}, the Contractor shall have available on the project such suitable approved equipment and materials as necessary to enclose the uncured concrete and keep the air temperature inside the enclosure within the following ranges and for the minimum times noted hereinafter.

If there are indications there will be temperatures below 40 °F {5 °C} during the first three days after placement of concrete, it shall be protected from cold temperatures by keeping the surface at a temperature above 50 °F {10 °C} for the first 72 hours after placement and above 32 °F {0 °C} an additional 72 hours. However, the protective covering shall be retained in place until the temperature inside the protective covering reaches that of the surrounding atmosphere.

When the Contractor is permitted to place concrete at temperatures below 40 °F {5 °C}, the aggregates and/or mixing water shall be heated as necessary to keep the temperature of the plastic concrete above 50 °F {10 °C} from the time of placement to the time of initial set; however, in no case shall the materials be heated in excess of 150 °F {65 °C}, nor shall aggregates from frozen stockpiles be incorporated into the mixture. Materials entering the mixer shall be free from ice, snow, or frozen lumps. Salts, chemicals, or other materials shall not be incorporated in the concrete to prevent freezing. Care shall be taken to heat all materials uniformly and avoid hot spots that will burn or overheat the materials.

The Contractor shall assume all risk and added cost connected with mixing, placing and protecting of concrete during cold weather. Permission given by the Engineer to place concrete during such time will in no way relieve the Contractor of responsibility for satisfactory results. Should it be determined at any time that concrete placed under such conditions is found to be unsatisfactory, it shall be removed and replaced with satisfactory concrete by the Contractor without extra compensation.

c. Hot Weather Operations.

The following hot weather operations practices shall be followed for all concreting done between June 1 and September 15 of each year, and any other time when the temperature of the concrete may be above 95 ºF {35 ºC} or 90 ºF {32 ºC} for bridge deck slabs.

The Contractor shall submit in writing a proposed plan for controlling the concrete mixture temperature during hot weather operations. The hot weather concrete plan shall outline the Contractor's procedures to maintain the temperature of the concrete at or below the temperature requirements noted above, and the Contractor's procedures for transporting, handling, placing, finishing, and curing concrete during hot weather. The hot weather concrete plan shall be submitted at the pre-construction conference to the Division Materials Engineer for approval before any concrete placement is allowed.

During hot weather operations an approved retarder admixture shall be used in the concrete mixture, and the concrete shall be properly placed and finished with the procedures previously submitted by the Contractor. Cooling of the mixing water and/or aggregates or placement during the cooler part of the day may be required to meet the above maximum temperature requirements. In no instance shall a concrete bridge deck slab mixture be placed when the temperature of the plastic concrete is above 90 °F {32 °C}. When the temperature of the steel is greater than 120 ºF {50 ºC}, the steel forms and reinforcement steel shall be cooled prior to concrete placement. Conveying and placing equipment shall be cooled if necessary to maintain proper concrete placing temperature.

(e) HANDLING AND PLACING CONCRETE.

1. GENERAL.

In preparation for the placing of concrete, all sawdust, chips, and other construction debris and extraneous matter shall be removed from the interior of forms. Temporary struts, stays, or braces serving to hold the forms in place until the concrete is placed shall be removed prior to being encased in the concrete. All permanent struts, stays, or braces shall be precast concrete struts or, at the Contractor's option, approved steel struts; no wooden struts shall be permitted.

During the placing of concrete, the Contractor shall continuously check the alignment of forms and immediately correct any yielding of the forms or falsework.

Concrete shall be deposited continuously for each monolithic section of the work by placing the fresh concrete in horizontal layers of approximately 12 inches {300 mm} in thickness. Each additional layer shall be placed and compacted before the preceding layer has taken its initial set, 45 minutes for mixtures without retarder and 60 minutes for mixtures with retarder.

For vertical members the maximum height of concrete placement shall not exceed 20 feet {6 m}, except for underwater concrete or when steel forms are used. When structurally sound steel forms are used, concrete placement may be made up to 30 feet {9 m} in height provided that an approved mortar tight downspout of sufficient length to reach within 5 feet {1.5 m} of the bottom of the placed concrete and a vibrator of sufficient length to provide good consolidation throughout the concrete placement are used. Any vertical member exceeding 20 feet {6 m} in height shall be broken into two or more approximately equal concrete placements unless the preceding requirements are met.

When succeeding concrete placements are necessary, the next concrete placement will not be permitted until the concrete in the underlying placed concrete has aged at least 12 hours or attained a minimum compressive strength of 2400 psi {17 MPa} from cylinders prepared in conformity with AASHTO T 23. When a set retarding admixture is used in the preceding concrete placement, the next concrete placement shall not be permitted until a 2400 psi {17 MPa} cylinder strength is attained.

The forms shall not be jarred nor shall any strain be placed on reinforcing bars partially encased in concrete that will cause damage to bond. All accumulations of mortar splashed on the reinforcing steel and surfaces of forms shall be removed before the next concrete placement.

When it is necessary to pump water from the excavation during placing of concrete to deposit the concrete in the dry, the sump for the intake hose shall be located outside the forms.

The use of aluminum pipes, chutes, or other devices made of aluminum that come into direct contact with the concrete shall not be utilized in the handling and placing operations.

a. Use of Chutes, Pipes or Belts.

Concrete shall not be dropped a distance of more than 5 feet {1.5 m} unless confined in an approved mortar tight downspout of not less than 4 inches {100 mm} in diameter. Downspouts shall be equipped with suitable hoppers at their inlet end and shall be provided in sectional lengths that will permit adjustment of the level of the outlet during placement.

The number of downspouts furnished shall be sufficient to ensure the concrete placement in horizontal layers. Depositing large quantities of concrete at one point in the form and running, flowing, or working the concrete along the forms will not be permitted.

In wall sections where a 4 inch {100 mm} downspout cannot be utilized without displacing the reinforcing steel, the concrete may be dropped in excess of the 5 feet {1.5 m} previously noted, provided such does not displace the reinforcing steel nor produce segregation of the concrete.

(1) Chutes, pipes, or power belts may be used to convey concrete from the concrete mixer or transporting vehicle to the forms, and they shall convey it to its final position without segregation and without displacing the reinforcing steel. If the use of this equipment results in honeycombed or otherwise substandard concrete, the Engineer will require it to be changed or its use discontinued.

(2) Chutes, pipes, and power belts shall be flushed with water after each run and this water shall be discharged free of the freshly placed concrete. All hardened concrete shall be promptly removed.

b. Pumping.

Direct placement of concrete by an approved pumping device will be permitted. The equipment shall be so arranged that no vibration result that might damage freshly placed concrete. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. When pumping is completed, the concrete remaining in the pipeline, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients. After each placement the equipment shall be cleaned to prevent improper results on subsequent operations.

c. Compacting and Vibrating.

Concrete, except underwater concrete, shall be thoroughly compacted by mechanical vibration applied internally, during, and immediately after depositing.

The application of a vibrator or vibrators shall be at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly effective. Vibrators shall be manipulated so as to thoroughly work the concrete around the reinforcement and embedded fixtures and into the corners and angles of the forms. Vibration shall be supplemented by as much spading as is necessary to ensure smooth surfaces and dense concrete.

The vibrators shall be methodically inserted and withdrawn from the concrete. The vibration shall be of sufficient duration and intensity to thoroughly compact the concrete, but vibrators shall be withdrawn before segregation and localized areas of grout result.

Vibration shall not be applied directly or through reinforcement to sections or layers of concrete that have hardened to the degree that the concrete ceases to be plastic under vibration. Vibrators shall not be used to make concrete flow in the forms over distances so great as to cause segregation.

2. CULVERTS.

See Section 524 for specific details not covered in this Section.

3. RETAINING WALLS.

See Section 529 for specific details not covered in this Section.

4. BRIDGES.

See Section 510 for specific details not covered in this Section.

5. DEPOSITING CONCRETE UNDER WATER.

a. General.

Concrete shall not be deposited in water unless provided for on the plans, or authorized as provided in Subarticle 503.03(g). Concrete placed under water shall be placed as hereinafter provided.

b. Control.

Seal concrete shall be placed continuously from start to finish ensuring the concrete placement being monolithic. The surface of the concrete shall be kept as nearly horizontal as practicable at all times. To ensure bonding, each succeeding layer of seal or foundation concrete shall be placed before the preceding layer has initially hardened. All laitance or other foreign matter shall be removed from the top surface of the concrete, and bonding of construction joints performed in accordance with the requirements given elsewhere in this Section.

c. Placing Methods.

Concrete specified to be deposited in water shall be seal concrete as provided in Article 501.02. To prevent segregation, it shall be carefully placed in a compact mass in its final position by means of a tremie, a bottom dump bucket, pumping, or other approved method. Concrete shall not be disturbed after being deposited. Still water shall be maintained at the point of deposit as nearly as practical.

(1) Use of Tremie.

A tremie shall consist of a rigid, watertight tube of sufficient strength to withstand the stress to which it is subjected and be at least 8 inches {200 mm} in diameter. The tremie shall be supported so as to permit rapid lowering when necessary to retard or stop the flow of concrete. The tremie shall be plugged at the start of work with an approved device capable of separating the concrete from the water until the tube is filled with concrete. The tremie tube shall be kept partially filled with concrete at all times during the concrete placement. When a batch is dumped into the hopper, the flow of concrete shall be induced by slightly raising the tremie, always keeping the discharge end in the deposited concrete. The flow shall be as nearly continuous as possible and in no case shall it be intentionally interrupted until the entire seal concrete foundation work is completed.

(2) Use of Bottom Dump Bucket.

The bottom dump bucket shall have a capacity of not less than 0.5 cubic yards {0.5 m^3} and be mechanically equipped to prevent dumping until it rests on the foundation or previously placed concrete. The bucket shall be completely filled and lowered very carefully until it rests upon the foundation or concrete already placed so as not to get a wash over the bucket top. It shall then be raised very slowly during the discharge travel, the intent being to maintain as nearly as possible, still water at the point of discharge and to avoid agitating the mixture; also to allow the concrete to be deposited by the time the bucket emerges from the concrete already on the foundation.

(3) Pumping.

In addition to the requirements given elsewhere in this Section, the following shall also apply for placing concrete under water by pumping. Concrete may be pumped into a tremie, or directly to the point of placement. If the concrete is pumped directly to the point of placement, a rigid pipe shall be provided that must extend a minimum of 5 feet {1.5 m} above the water level when resting on the bottom of the excavation. A flexible hose suitable for pumping concrete may be used from the top of the rigid pipe to the concrete pump. The method of placing and handling the concrete shall be as described elsewhere in this Section.

(f) CONSTRUCTION JOINTS.

1. GENERAL.

Construction joints shall be placed only at the locations shown on the plans or as directed. In case of an emergency, if a construction joint is permitted, it shall be placed as approved by the Engineer.

2. HORIZONTAL JOINTS.

Generally, horizontal joints shall be made by placing the concrete slightly above the grade of the construction joint, and after the surface has reached its final set, the surface shall be prepared as outlined in Item 4 below. Insert formwork shall be used to obtain neat, horizontal lines.

3. VERTICAL JOINTS.

Vertical joints shall be formed with substantial bulkheads or headers as required. Feather-edged joints will not be permitted.

4. BONDING.

Before placing concrete against any construction joint, the surface of the hardened concrete shall be scarified in such a manner that all foreign matter, laitance, and loose material is removed to expose sound concrete. The prepared concrete at the construction joint shall be kept wet for a minimum of one hour prior to placing concrete against it. An approved epoxy, listed in the

MSDSAR manual, List II-7, "Epoxy Resin Systems for Use with Portland Cement Concrete", shall be placed for bonding freshly mixed concrete to hardened concrete. Keyways and dowels shall be placed as shown on the plans or directed.

5. WATER STOPS.

Water stops shall be furnished and placed as required by the plans. They shall form continuous watertight joints.

(g) EXPANSION JOINTS.

All joints shall be constructed according to details shown on the plans, providing the design width designated for the expansion joint. The insertion and removal of joint forming material shall be accomplished without chipping or breaking the corners of the concrete. Expansion material, when required, shall be placed as shown on the plans.

(h) FORMS.

1. GENERAL.

Reference is made to Article 105.02 concerning working drawings and other details that require submission.

Forms shall be substantial and unyielding and so designed and constructed that the finished concrete will conform to the plan dimensions and contours within tolerances listed in other portions of these Specifications.

Basic bridge plan design is for removable forms and plan concrete quantities computed accordingly. Hence, removable forms are to be used unless stay-in-place forms are allowed by contract plan notes and details. When shown by contract plan details, the Contractor will be allowed the option of using permanent steel forms under deck slabs between girders, beams or stringers provided the cost of extra concrete and materials required by this type of form is at the Contractor's expense.

2. DESIGN.

a. Removable Forms.

All removable forms shall be designed so that they may be removed without damage to the concrete. Forms shall be so constructed that portions where finishing is required can be removed for that purpose without loosening supports or disturbing portions of forms that must still remain in place.

b. Permanent Steel Bridge Deck Forms.

The forms and supports shall be zinc coated (Galvanized) steel conforming to ASTM A 653 with coating Class of G165 according to ASTM A 525 and shall otherwise meet all requirements relevant to permanent steel forms and the placing of concrete as specified herein and as noted on the plans. Miscellaneous fastener hardware (bolts, nuts, metal screws, and washers) shall be common stock hardware items galvanized to provide a zinc coating equal to or better than that required by ASTM B 633.

The following criteria shall govern the design of permanent steel bridge deck forms:

(1) The steel forms shall be designed on the basis of dead load of form, reinforcement, and plastic concrete plus 50 pounds per square foot {2.4 kN/m²} for construction loads. The unit working stress in the steel shall not be more than 0.725 of the specified minimum yield strength of the material furnished, but not to exceed 36,000 pounds per square inch {250 MPa}. The uncoated thickness of the forms shall not be thinner than 0.0359 inch {0.9 mm}.

(2) Deflection under the weight {mass} of the forms, the plastic concrete, and reinforcement shall not exceed 1/180 of the form span or 0.5 inches {13 mm}, whichever is less, but in no case shall this loading be less than 120 pounds per square foot {5.7 kN/m²} total.

The permissible form camber shall be based on the actual dead load condition. Camber shall not be used to compensate for deflection in excess of the foregoing limits.

(3) The design span of the form sheets shall be the clear span of the form plus 2 inches {50 mm} measured parallel to the form flutes.

(4) Physical design properties shall be computed in accordance with requirements of the American Iron and Steel Institute Specification for the Design of Cold Formed Steel Structural Members, latest published edition.

(5) The plan dimensions of both layers of primary deck reinforcement from the top surface of the concrete deck shall be maintained. A minimum concrete cover of 1 inch {25 mm} shall be maintained for the bottom slab steel.

(6) Forms shall not be welded to any part of the structural steel main members (the definition of "main members" is given in Section 836. The installation of forms may be done by welding attachment straps together if backing plates are installed under the straps. The backing plates shall be thick enough to prevent burn-through. The width of the backing plates shall be at least one inch wider than the width of the welded attachment straps so that the backing plates extend out at least one half inch beyond each edge of the welded straps.

3. CONSTRUCTION.

a. Removable Forms.

(1) Forms shall be mortar tight and placed and maintained true to designated lines and grades until the concrete has been placed and hardened. Forms found unsatisfactory in any respect shall not be used and, if rejected, shall be removed from the immediate work site.

(2) All moldings, panel work, and bevel strips shall be straight and true with neatly mitered joints and all corners in the finished work shall be true, sharp, and clean cut and of good workmanship. Forms shall be filleted and chamfered at all sharp corners except where angles exceed 90°, such as at the face of bridge curbs and deck overhangs. Unless otherwise shown on the plans, the equal sides on triangular molding or chamfer shall be 0.75 inches {19 mm}, except that for small members the width shall be 0.5 inches {13 mm}.

(3) For narrow walls, columns, et cetera, the Engineer may require daylight and inspection holes at vertical intervals as directed.

(4) Bolts or ties shall be used to prevent forms from spreading. All such bolts or ties shall be arranged so that at least 1 inch {25 mm} of that part adjacent to the concrete surface can be removed or broken off.

(5) Anchor devices may be cast in the concrete for later use in supporting forms only if they are detailed on approved formwork or falsework plans.

(6) The inside of all forms shall be coated with a non-staining oil or other approved material to prevent the concrete adhering to them. Extreme care shall be exercised to ensure that form oil does not come in contact with structural or reinforcing steel.

(7) The forms shall be inspected before placing the concrete and the interior dimensions carefully checked to ensure that the concrete will be of the form and dimensions shown on the plans. The inside faces of the form shall be thoroughly examined and any projections, ridges, depressions, offsets, spaces or other unevenness corrected so that the surface of the concrete will be smooth, even and true, and mortar tight. All forms shall be wetted immediately prior to placing the concrete, but no excess water shall remain in the forms.

(8) To permit proper surface finishing, forms shall be removed as soon after the concrete has set as is practicable and safe. In the determination of the time for the removal of forms, except those listed elsewhere in this Section, consideration shall be given to the location and character of the structure, the weather and other conditions influencing the setting of the concrete, and the material used in the mixture. Methods of form removal likely to cause over-stressing of the concrete shall not be used. Forms shall not be removed without the approval of the Engineer.

b. Permanent Steel Bridge Deck Forms.

(1) All forms shall be installed in a manner acceptable to the Engineer.

(2) On steel members, form sheets will not be permitted to rest directly on the top of the stringer or floor beam flanges. Sheets shall be securely fastened to form supports and shall have a minimum bearing length of 1 inch {25 mm} at each end. Form supports shall be placed in direct contact with the flange of stringer or floor beam. The installation of attachment straps, shelf angles, and forms shall be carefully monitored to make sure that no welding (weld, arc strike, etc.) is done to the structural steel.

On concrete girders, form supports to be cast into the girders shall be shown on the shop drawings. All attachments to form supports shall be made by permissible welds, bolts, clips, or other approved means. Attachment by welding to form supports may be performed by non-ALDOT qualified welders with welding electrodes recommended by the form manufacturer.

All form welds shall be cleaned of slag and wire brushed just prior to placing of the deck concrete.

(3) Any permanently exposed form metal where the galvanized coating has been damaged shall be thoroughly cleaned, wire brushed, and painted with two coats zinc oxide-zinc dust primer, Federal Specification TT-P-641, Type II, no color added, to the satisfaction of the Engineer. Minor heat discoloration in areas of welds need not be touched up.

(4) Transverse construction joints shall be located at the bottom of a flute and 0.375 inch {10 mm} weep holes shall be field drilled at not more than 12 inches {300 mm} apart along the line of the joint. If a bridge is on a skew, or in a curve, a weep hole shall be drilled in the bottom of each flute the joint crosses.

(i) FALSEWORK.

1. DESIGN AND CONSTRUCTION.

a. General.

For the purpose of this specification, falsework shall be divided into two classes as follows:

Class 1 - Common or simple falsework such as temporary bracing to provide stability for bridge girders, permanent steel bridge deck forms, deck overhang supports, screed rail support systems, or substructure supports attached to permanent parts of the structure (i.e. drilled shafts, columns, caps, etc.).

Class 2 - Unique or complex falsework such as that required for box girder construction, RCDG construction, structural cofferdams, or any falsework used in connection with steel erection.

The Contractor shall be responsible for designing and constructing safe and adequate falsework which provides the necessary strength and rigidity, supports all loads imposed, and produces a finished structure with lines and grades shown on the plans. Falsework shall be designed and constructed to withstand all imposed loads during erection, construction, usage, and removal.

The Contractor shall submit to the Construction Engineer working drawings and design calculations for falsework in accordance with Article 105.02.

For both classes of falsework drawings, the Construction Engineer will verify that the licensed Professional Engineer signature and stamp requirements of Subarticle 105.02(d) are met. Class 1 drawings will be stamped for distribution and then distributed. Class 2 drawings will be forwarded to the Bridge Engineer for review to determine if the results of the licensed Professional Engineer's calculations are in compliance with design criteria. If the design criteria are met, the submittal will be returned to the Construction Engineer to be stamped for distribution and then distributed.

All falsework will be inspected by the Project Manager using the distributed drawings. For all Class 2 falsework, the licensed Professional Engineer who signed the falsework submittal shall verify that the falsework as constructed meets all design criteria prior to any load being placed thereon. A signed statement from the licensed Professional Engineer covering the verification shall be furnished to the Project Manager by the Contractor.

When falsework of either class is to be used over highway, pedestrian, or railroad traffic, additional details will be required to provide for special protection to prevent debris from falling on the traffic below. These additional details will be required for both removal and construction work.

All falsework drawings shall include a description and size of all members, connections, and miscellaneous hardware. When pre-manufactured assemblies are used, all parts shall be easily identified as those shown on the drawings.

All falsework shall be designed and constructed to provide the necessary rigidity and to support the loads without appreciable settlement or deformation. Screw jacks and/or hardwood wedges shall be used to take up any settlement in the formwork either before or during the placing of concrete.

Any part of the permanent structure to which falsework will be attached shall attain a minimum compressive strength of 2400 psi {17 MPa} from cylinders prepared in conformity with AASHTO T 23 prior to the attachment.

Falsework that cannot be founded on a satisfactory footing shall be supported on piling, which shall be spaced, driven, and removed in an approved manner.

All spans shall be given a temporary camber to allow for deflection, shrinkage, and settlement. Bridges shall have a permanent camber only where so shown on the plans or directed.

b. Design Criteria.

Falsework shall be designed to withstand all imposed loads during erection, construction, usage, and removal. Designs shall be based on minimum loads, maximum stresses and deflections, and conditions in the following paragraphs. Allowable stresses are based on use of

undamaged, high quality materials. The contractor shall reduce stresses if lesser quality materials are used.

Design Loads for falsework shall consist of the sum of dead and live vertical loads and assumed horizontal loads. Minimum total design load for any falsework shall not be less than 100 pounds per square foot {4.8 kN/m²} for the combined live and dead load regardless of slab thickness.

Dead Loads shall include weight {mass} of concrete, reinforcing steel, forms, and falsework. Weight {mass} of concrete, reinforcing steel, and forms shall not be assumed to be less than 160 pounds per cubic foot {25 kN/m³}.

Live Loads shall consist of the actual weight {mass} of any equipment to be supported by falsework applied as concentrated loads at the points of contact and a uniform load of not less than 20 pounds per square foot {0.960 kN/m²} applied over the area supported plus 75 pounds per linear foot {1.1 kN/m} applied at the outside edge of deck overhangs.

Horizontal Loads applied shall be the sum of the actual horizontal loads due to equipment, construction sequence, or other causes and an allowance for wind, but in no case shall the design horizontal load to be resisted in any direction be less than two percent of the total dead load. Falsework shall be designed of sufficient rigidity to resist the design horizontal load prior to placement of concrete.

Falsework Foundations shall be designed to carry the loads imposed on them without exceeding allowable soil bearing values and anticipated settlements.

Maximum allowable stresses, loadings, and deflections used in design of falsework shall be as follows:

TIMBER	
Compression perpendicular to the grain (Dense Select Structural Grade Southern Pine)	450 psi {3 MPa}
Compression parallel to the grain but not to exceed 1600 psi {11 MPa}	480,000/(L/D)^2 psi {3300/(L/D)^2 MPa}
Flexural stress reduced to 1500 psi {10 MPa} for members with a nominal depth of 8 inches {200 mm} or less.	1800 psi {12 MPa}
Horizontal shear (Dense Select Structural Grade Southern Pine)	90 psi {0.620 MPa}
Deflection due to weight {mass} of concrete.	1/240 of clear span irrespective of the fact that the deflection may be compensated for by camber strips.
Timber piles, maximum loading (12 inch {300 mm} Butt Diameter)	24 tons {213 kN}

STEEL	
Deflection due to weight {mass} of concrete irrespective of the fact that the deflection may be compensated for by camber strips.	1/240 of clear span
Stresses shall not exceed those specified in the Manual of Steel Construction as published by the AISC. When the grade of the steel cannot be positively identified, design stresses shall conform to either those specified in said AISC Manual for ASTM A 36 steel or the following:	
Tension, axial and flexural.	22,000 psi {152 MPa}
Compression, flexural (But not to exceed 22,000 psi {152 MPa})	12,000,000 / (LD/bt) psi {83 000/ (LD/bt) MPa}
Compression, axial.(Except L/r shall not exceed 120.)	16,000 - 0.38(L/r)^2 psi {110 - 0.38(L/r)^2 MPa}
Shear on gross section of the web of rolled shapes.	14,500 psi {100 MPa}
Web crippling for rolled shapes	27,000 psi {186 MPa}

In the foregoing formulas, L is the unsupported member length, D is the least dimension of rectangular columns, or the width of a square of equivalent cross sectional area for round columns, or the depth of beam, b is the width of member, t is the thickness of the compression flange

and r is the radius of gyration of the member. E, modulus of elasticity, used for timber shall be 1.6 X 10^6 psi {11 GPa} and for steel shall be 30 X 10^6 psi {200 GPa}.

Any additional design criteria, which may be needed, shall be developed by the Contractor's licensed Professional Engineer designer and included with the calculations of the falsework submittal.

Falsework over or adjacent to roadways or railroads which are open to traffic during construction shall be designed and constructed such that it is stable if subjected to vehicular impact or features shall be provided to protect falsework supports from vehicular impact. Protection shall be designed such that it does not present a hazard to vehicular traffic.

Design criteria for permanent steel bridge deck forms shall be as shown elsewhere in this Section.

2. REMOVAL OF FALSEWORK.

No falsework supporting concrete shall be removed or wedges loosened without the consent of the Engineer.

If adequate test cylinders have been made, falsework may be removed when the cylinders indicate that the concrete has developed a minimum compressive strength of 2400 psi {17 MPa}, otherwise falsework shall be removed according to the following time limitations.

Falsework may be removed after expiration of 14 days exclusive of days when for four hours or more the temperature is below 40 °F {5 °C}. Falsework under slabs of less than 6 foot {2 m} span may be removed after seven days with the same temperature limitations.

Falsework shall be gradually and uniformly released in such a manner as to avoid injurious stresses in any part of the structure. Wedges shall be removed first under slabs and transverse beams, starting at the center of the span and working both ways; then wedges under longitudinal girders and beams shall be removed also starting at the center of the span and working both ways simultaneously.

All falsework piles, at the time of removal or cleanup, shall be pulled out or cut off at an elevation not more than 6 inches {150 mm} above the bed of the stream. Piles not in water shall be removed or cut off flush with or below the ground surface of stream bed. Piles within roadbed limits shall be cut off at least 3 feet {1 m} below subgrade elevation. Other piles within roadway limits shall be cut off at least 12 inches {300 mm} below the finished surface of the front slope, ditch, or backslope.

(j) CURING CONCRETE.

1. EXPOSED SURFACES.

Whenever the Engineer determines that weather conditions are such that evaporation from the surface may cause shrinkage cracking, a fog or mist spray may be required at intervals as needed during and after finishing until curing material can be applied so that the surface will be at all times damp but not excessively wet.

The Contractor shall give careful attention to the proper curing of the concrete. All surfaces not covered by forms shall be protected with an approved membrane curing compound, from List II-30 of the MSDSAR manual, dampened burlap, Polyethylene Film* (White Opaque), White Burlap - Polyethylene Sheet*, cotton mats, or wetted sand, as soon after placing the concrete as possible without marring the surface, except for bridge deck slabs which shall be treated as noted in Item 2 below. Immediately upon removal of forms, other surfaces shall be treated by one of the approved curing methods.

Unless membrane curing compound is used, all curing materials shall be kept wet and shall remain in place for seven days, except that small portions may be temporarily removed during actual finishing operations.

*NOTE: When polyethylene film or white burlap-polyethylene sheeting is used, it shall be installed and maintained in such a manner that a complete, moisture-tight enclosure over the surface to be cured will be provided. These materials shall meet the requirements noted in Section 830.

2. BRIDGE DECK SLABS.

a. General.

Prior to placing a bridge deck slab, the evaporation rate shall be determined by use of the graph in Figure 1, “Evaporation Rate of Surface Moisture”, and recorded on form BMT-171, *“Evaporation Rate Record”*. The Contractor shall furnish the equipment necessary to measure the air temperature (ambient), wind velocity, and humidity. The equipment or a manufacturer's certificate of calibration showing the equipment’s model number and serial number shall be submitted to the

Division Materials Engineer no less than 14 days prior to their use. The equipment shall consist of the following instruments with the following specifications.

1. Anemometer: Range – 0-25mph {0-40 km/hr}.
   Accuracy – plus or minus 1.5%.
   Units – U.S. Customary and Metric.
2. Hygrometer: Range – 10-95% relative humidity.
   Accuracy – plus or minus 1.5%.
   Units - U.S. Customary and Metric.
   Certified and traceable to N.I.S.T.
3. Thermometer: range – 0-140 °F {0-60 °C}.
   Accuracy – plus or minus 2 °F {plus or minus 1 °C}
   Units - U.S. Customary and Metric.

Combination instruments such as anemometer and thermometer or hygrometer and thermometer will be accepted provided they meet the above requirements.

If the placement is expected to last more than two hours, the evaporation rate shall be checked and recorded on form BMT-171 at two-hour intervals or less. To prevent plastic shrinkage cracking, the expected evaporation rate shall not exceed 0.2 pounds per square foot per hour {1.0 kg/m^2/hour}. When the evaporation rate exceeds this amount, the Contractor shall be required to effectively reduce the rate to within the allowable limits by taking one or more of the following actions:

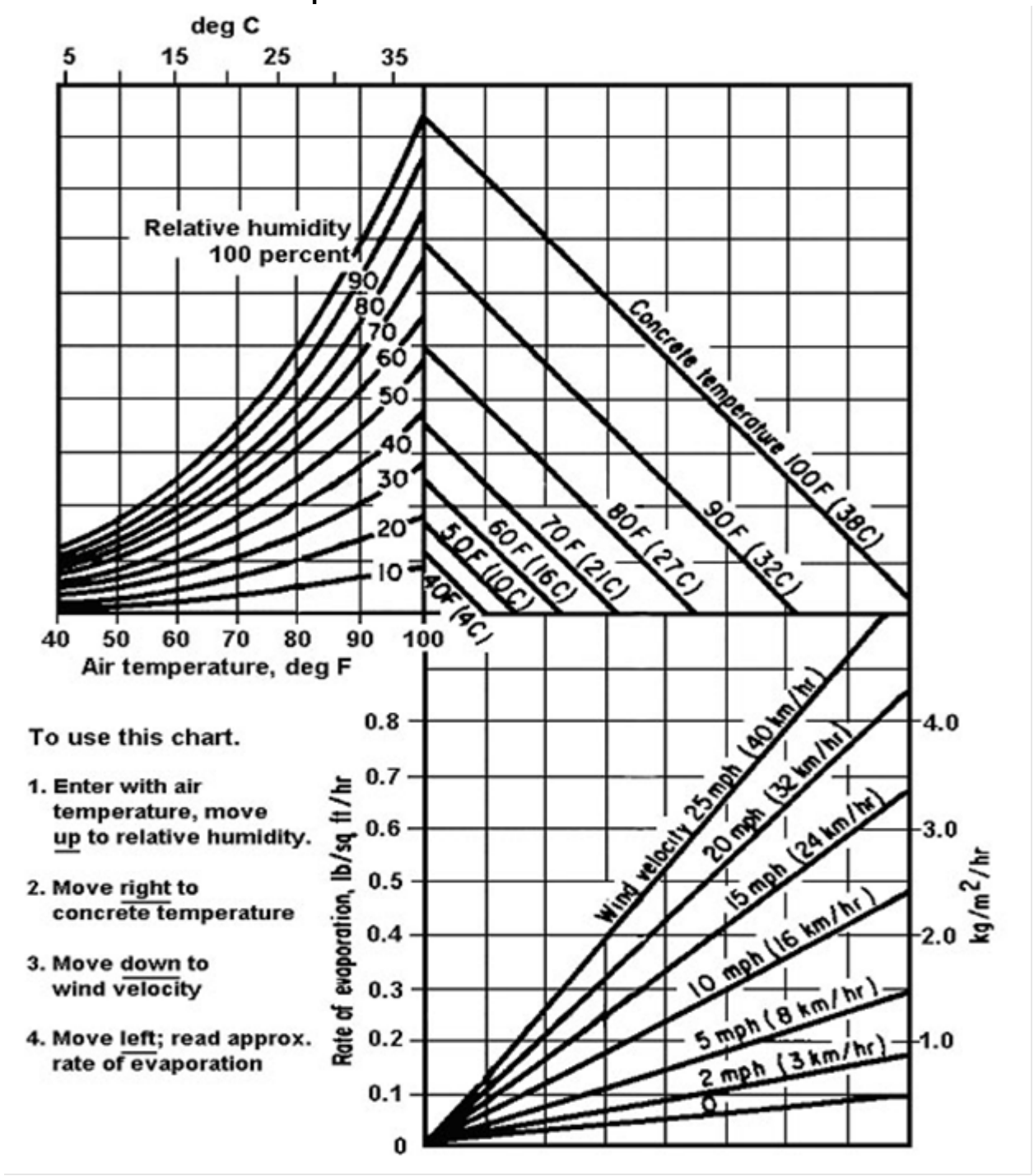
(1) Construct windbreaks or enclosures to effectively reduce the wind velocity throughout the area of placement.

(2) Use fog sprayers or sprinklers upwind of the placement operation to effectively increase the relative humidity.

(3) Reduce the temperature of the concrete.

The Department will evaluate plastic shrinkage cracks that occur. Remedial measures shall be performed as directed by the Engineer. Plastic shrinkage cracks shall never be troweled over or filled with slurry.

FIGURE 1. Evaporation Rate of Surface Moisture



b. Evaporation Control After Screeding.

Continuous fogging or an evaporation barrier (monomolecular) material shall be used for all bridge deck curing beginning immediately after the screeding operations have been completed for sections of the deck not to exceed five feet from the starting location.

If fogging is to be used, a continuous fog or mist spray shall be maintained until the moist curing procedures described elsewhere in this Section begin. Intermittent fogging is not acceptable if there is drying of the concrete surface. If water begins to pond on the deck, the Contractor shall adjust the rate of fogging to minimize the ponding of water.

If an evaporation barrier material is to be used, it shall be applied immediately behind the screeding operation and in accordance with the manufacturer's recommendations. The

entire top portion of the concrete slab shall be covered with the barrier material applied under pressure at a rate of one gallon {liter} to not more than 200 square feet {5 m^2} of fresh concrete. Application shall be done with an industrial type sprayer in such a manner as to cover the surface being treated with a uniform film.

c. Moist Curing After Finishing.

Immediately after the finishing operation, concrete bridge decks shall be moist cured for seven days by maintaining a moist condition for the entire curing period. This may be accomplished by one of the following methods:

(1) Fog spraying or sprinkling with nozzles or sprinklers. When using this method, the Contractor shall maintain a complete and continuous moist condition of the concrete surface. Intermittent sprinkling is not acceptable. Care shall be taken that erosion of the surface does not occur.

(2) Saturated burlap, saturated plastic coated burlap, or cotton mats. These curing materials shall be clean and free from any injurious substances that can cause deleterious effects to the concrete or cause discoloration. The burlap or cotton shall be completely saturated before being placed on the concrete and shall be maintained in that condition for the entire curing period. Should tears or holes appear in the mat sheets, they shall be repaired immediately. All edges of burlaps and mats shall extend at least 18 inches {450 mm} beyond the concrete surface. Where two individual sheets join, their edges shall overlap at least 12 inches {300 mm}. All edges and overlaps shall be secured to ensure that the concrete surface is completely covered during the entire curing period. These curing materials shall be kept in contact with the concrete surface at all times. Alternate cycles of wetting and drying shall be avoided because this may result in pattern cracking.

Prior to the start of the curing operation, the contractor shall have an approved curing system that ensures continuous moist curing of the concrete for 24 hours per day.

If water or the chosen curing material stains or discolors concrete surfaces, which are permanently exposed, the contractor shall be responsible for cleaning the surfaces. When wooden forms are left in place during curing, they shall be kept wet at all times. If steel forms are used in hot weather, non-supporting vertical forms shall be broken loose from the concrete and curing water continually applied in this void. If the forms are removed before the end of the curing period, curing shall be carried out as on unformed surfaces.

3. PROTECTION OF CONCRETE DURING CURING.

Green concrete shall be protected against jarring or other movement that might cause damage. No traffic or other superimposed load will be permitted over bridges or culverts until the following criteria have been met:

(1) Bridges - The deck concrete shall have reached a minimum 4000 psi {28 MPa} compressive strength as determined from test cylinders.

(2) Culverts - The culvert concrete shall have reached a minimum of 3000 psi {21 MPa} compressive strength as determined from test cylinders or 28 days have passed since the last concrete was placed exclusive of days when for 4 hours or more the temperature is below 40 °F {5 °C}.

(k) FINISHING CONCRETE.

1. GENERAL.

The details set forth hereinafter in this Subarticle cover the requirements for the several classes of surface finishes which shall be applied to the various parts of concrete structures.

These various classes of surface finishing will be used in accordance with the following:

Class 1 - required on all concrete surfaces except wearing surfaces and surfaces placed in direct contact with natural ground or embankment.

Class 2 - required on all exposed concrete surfaces within the requirements noted elsewhere in this Section unless another class is specified.

Class 3 - may be used on designated bridge structures when specified by plan details.

Wearing surface finish for bridge deck travelway shall be as specified in Subitem 510.03(c)6.c. and for sidewalks as specified in Item 510.03(c)7.

Exposed surfaces or sidewalks, driveways, curbs, and gutters shall have a textured finish obtained by the use of a burlap or cotton drag, brush, or broom so that a uniform gritty texture is obtained. Exposed surfaces of concrete flumes and slope paving shall have a float finish.

2. CLASS 1 FINISH (ORDINARY SURFACE FINISH).

This class finish will require the concrete surface to be free from objectionable projections, swells, fins, ridges, depressions, waves, holes, and other defects. This will require that immediately after the forms are removed, metal ties shall be removed for a minimum depth of 1 inch {25 mm} from the face of the concrete. All cavities or depressions resulting from this removal, or from other causes, shall be carefully filled and pointed with a mortar of sand and cement, and the surface left smooth and even. The proportion of cement to sand, measured by volume, shall be one to two unless otherwise specified. The surface film of all pointed areas shall be carefully removed before setting occurs. Any fins, ridges, or projections shall be struck off smooth with the surface of the concrete. Particular care shall be taken throughout the progress of this operation to use one of the curing methods covered elsewhere in this Section.

If a Coated Surface Finish is to be applied in a later finishing operation, the coating material may be used in lieu of mortar to fill small air holes in the concrete surface; however, this must be given time to take a set prior to applying the Coated Surface Finish.

3. CLASS 2 SURFACE FINISH.

a. General.

This class surface finish requires that, in addition to a Class 1 finish, the exposed surfaces of bridges, culverts, headwalls, inlets, etc. as defined in the Subitem d. below, receive an additional surface finish in accordance with the following:

If only one brand and type of cement from the same mill is used in a structure or unit (substructure or superstructure), the Contractor may elect to either apply a Rubbed Surface Finish or apply an approved coated Surface Finish.

If more than one brand of cement is used in a structure, the Contractor shall apply a Coated Surface Finish.

The same type of surface finish shall be used throughout the entire structure unless otherwise authorized in writing by the Engineer.

b. Rubbed Surface Finish.

As soon as the Class 1 surface finish has been completed and the pointing has set sufficiently to permit it, the entire surface except chamfers shall be wetted with a brush and rubbed with a No. 16 carborundum stone or an abrasive of equal quality, bringing the surface to a paste. The rubbing shall be continued sufficiently to remove all form marks and projections, producing a smooth dense surface without pits or irregularities. The material, which in the above process has been ground to a paste, shall then be carefully spread or brushed uniformly over the entire surface and allowed to take a reset. Curing shall continue on this surface as noted to be required elsewhere in this Section.

The final finish shall be obtained by a complete rubbing with a No. 30 carborundum stone or an abrasive of equal quality. This rubbing shall continue until the entire surface is of a smooth texture and uniform in color.

c. Coated Surface Finish.

Only Departmental approved coated finishing materials may be used. The coating material shall be one of the coating materials shown on List III-3, "Surface Coatings for Portland Cement Concrete". This list is given in the Department's Manual, "Materials, Sources, and Devices with Special Acceptance Requirements".

The application of the coating shall be in an approved manner (normally in accordance with the manufacturer's recommendations) by competent and experienced personnel. The overall coated finish shall be uniform in coverage, texture, and color after the coating material has taken set and cured. Failure to obtain uniformity of coverage, texture, and color shall be cause for the Engineer to require such remedial action as deemed necessary to obtain the desired results.

The following actions shall be taken before the application of any coated finish:

A Class 1 surface finish applied and all pointing completely set.

Surface clean and free from foreign matter.

If membrane curing compound was used to cure the concrete, the curing compound shall have weathered for a minimum time period of six weeks. Special care shall be taken to ensure that areas not to be treated are protected to prevent treatment from overlapping onto these designated areas.

d. Exposed Surfaces.

Exposed surfaces for this class finish is defined as all surfaces, including bottom chamfers and fillets except (1) the wearing surface of roadway slabs and sidewalks, (2) those surfaces having immediate contact with embankment or excavation, (3) those surfaces below low water level

and/or below newly established ground line after backfilling excavation or excavated channels, (4) underside and interior faces of girders, beams, and slabs, and underside of sidewalks where the edge beam extends 3 inches {75 mm} or more below the bottom of the sidewalks, (5) top and bottom surfaces of all type caps, and (6) those parts of minor structures, box culverts, and bridge culverts that are not readily visible from a travelway.

4. CLASS 3 SURFACE FINISH.

This class surface finish requires that, in addition to the Class 1 surface finish, only the designated exposed surfaces of a bridge structure noted below be given an additional finish of either a rubbed or coated finish in accordance with the requirements given elsewhere in this Section.

Exposed surfaces shall be defined as the inside, top, and outside surfaces of barrier rail to bottom of slab overhang, and all portions of the bridge abutments outside the edge of the exterior girders that are not in immediate contact with embankment or excavation. All other structure surfaces, exposed and unexposed, shall receive a Class 1 finish immediately after the forms are removed.

(l) CONCRETE FOR PRECAST NON-PRESTRESSED AND PRESTRESSED MEMBERS.

Concrete for precasting shall meet the requirements given in this Section unless amended by concrete requirements given in other Sections.

Additional requirements are given in Section 512 and ALDOT-367 for the concrete required for precast non-prestressed concrete bridge members. Additional requirements are given in Section 513 and ALDOT-367 for the concrete required for precast prestressed concrete bridge members.

501.04 Inspection.

(a) GENERAL.

The Contractor shall give the Engineer sufficient advance notice before starting to place concrete in any section of a structure to permit the inspection of forms, placing of steel reinforcements, and of preparation for placing. Any defective falsework or forming shall be corrected, or removed and replaced as necessary to the satisfaction of the Engineer, all at the expense of the Contractor.

Authorization of the Engineer shall be secured before concrete is placed in any portion of a structure. Any concrete placed in violation of this provision, or in the absence of the Inspector, shall be removed and replaced at no additional cost to the State.

(b) REMOVABLE FORMS.

After the forms have been removed, any defective work discovered shall be removed and replaced in a satisfactory manner. If the surface of the concrete is bulged, sagged, uneven, or honeycombed to such an extent that it cannot be satisfactorily repaired, the entire section shall be removed and replaced, at no additional cost to the State.

(c) STAY IN PLACE STEEL FORMS.

After the deck concrete has been in place for a minimum period of two days, the concrete, if deemed necessary by the Engineer, shall be tested for soundness and bonding of the forms by sounding with a hammer as directed by the Engineer. The number and locations of the forms to be tested shall be as selected by the Engineer. If areas of doubtful soundness are disclosed by this procedure, the Contractor will be required to remove the forms from such areas for visual inspection after the concrete has attained a minimum compressive strength of 2400 psi {17 MPa}. Care shall be exercised to distinguish the sound of broken bond from the sound of defective concrete.

At locations where sections of the forms are removed, the Contractor will not be required to replace the forms, but the adjacent metal forms and supports shall be repaired to present a neat appearance and assure their satisfactory retention. As soon as the forms are removed, the concrete surfaces will be examined for cavities, honeycombing, and other defects. If irregularities are found, and in the opinion of the Engineer these irregularities do not justify rejection of the work, the concrete shall be repaired as the Engineer may direct. If the concrete where the forms are removed is unsatisfactory, additional forms, as necessary, shall be removed to inspect and repair the slab, and the Contractor's methods of construction shall be modified as required to obtain satisfactory concrete in the slabs. All unsatisfactory concrete shall be removed or repaired as directed by the Engineer.

The Contractor shall provide all facilities as are reasonably required for the safe and convenient conduct of the Engineer's inspection procedures. No additional compensation will be allowed the Contractor for compliance with the above inspection procedures.

501.05 Acceptance of Concrete.

(a) GENERAL.

Certified Concrete Technicians, as required by the Department, shall perform all concrete inspections and testing. Procedures for technician certifications and laboratory qualifications are described in ALDOT-405, "Certification and Qualification Program for Concrete Technicians and Concrete Laboratories".

Fresh concrete will be accepted on the basis of slump, total air content, and temperature meeting the requirements specified for the Class of concrete.

Hardened concrete shall be accepted on the basis of compressive strength meeting the requirements specified in Item 501.02(c)2 for that Class of concrete.

Compressive strength from concrete cylinders will be accepted when the average of two consecutive cylinder test results, obtained at the same age, equals or exceeds the specified 28-day compressive strength, and neither cylinder test result is below 95% of the specified 28-day compressive strength.

(b) SUBSTANDARD CONCRETE.

1. GENERAL.

The Department will investigate any concrete not meeting the acceptance requirements outlined in Subarticle 501.05(a). Concrete investigations will be used to determine the suitability of potentially substandard concrete. This investigation may include any or all of the procedures outlined in ALDOT-170.

The combined results of the Department's investigations will be used to assess the acceptability or rejection of potentially substandard concrete.

If the investigation results show that the concrete fails to meet the contract requirements, the Contractor shall be responsible for the cost of the investigation to include, but not limited, to per-diem, travel expenses, and sampling and testing.

2. IN-PLACE COMPRESSIVE STRENGTH.

If the Department deems it necessary to evaluate only the in-place compressive strength of substandard concrete, a core investigation as described in ALDOT-170 will be performed.

Price adjustments will be applied to the applicable pay item for the number of cubic yards represented by the low cylinder breaks and will be determined as follows.

If the average compressive strength of the cores is equal to or greater than 100% of the specified 28-day compressive strength, the concrete will be accepted with no price adjustment.

If the average compressive strength of the cores is 85% or greater but less than 100% of the specified 28-day compressive strength, and the Bridge Engineer deems the concrete to be structurally acceptable, the concrete will be accepted with a price adjustment. The price adjustment will be applied to the applicable pay item for the number of cubic yards represented by the low breaks. The price adjustment shall be determined from the following formula:

$$\text{Price Adjustment (In Percent)} = 100 \times (1.0 - [\,(f'c - fc\ AVG) / (0.30\ f'c)\,])$$

f'c = Required 28-day Compressive Strength (psi) {MPa};

fc AVG = Average Compressive Strength of Test Cores (psi) {MPa};

The price adjustment shall be rounded to the nearest tenth of a percent;

The price adjustment is valid where: $50\% \geq$ Price Adjustment $< 100\%$.

SECTION 815
CEMENT

815.01 Type I Portland Cement.

Type I Portland Cement shall meet the requirements of AASHTO M 85 and the additional requirements shown below.

815.02 Type II Portland Cement.

Type II Portland Cement shall meet the requirements of AASHTO M 85 and the additional requirements shown below.

815.03 Type III Portland Cement (High Early Strength).

Type III Portland Cement shall meet the requirements of AASHTO M 85 and the additional requirements shown below.

815.04 Type IS Portland Blast Furnace Slag Cement.

Type IS Portland blast furnace slag cement (for use in soil-cement stabilization) shall meet the requirements of AASHTO M 240, Blended Hydraulic Cement.

815.05 Blank.

815.06 Masonry Cement.

Masonry cement shall meet the requirements of ASTM C 91.

815.07 Chemical Properties.

The Specifications for all cements as covered by Articles 815.01 to 815.06, inclusive, are amended to the effect that the total alkali content of any cement used, calculated as the percentage of sodium oxide (Na_2O) plus the product of 0.658 times the percentage of potassium oxide (K_2O), shall not exceed 0.60 percent.

In addition to the above, for Type II cement covered by Article 815.02, the standard chemical requirement shown in Table 1 of AASHTO M 85 for Tricalcium Silicate (C_3S) is hereby waived.

815.08 Testing of Cement.

All cement furnished for use shall be tested before use or be from an approved producer meeting the requirements of ALDOT-227, Quality Control of Portland and Blended Hydraulic Cements, and listed on List I-2, PRODUCERS OF PORTLAND AND BLENDED CEMENT, of the Department's "Materials, Sources, and Devices With Special Acceptance Requirements" Manual. Refer to Subarticle 106.01(f) and ALDOT-355 concerning this list.

815.09 Flash Set And False Set.

Flash set and false set, as determined by ASTM C 451, shall be cause for rejection of the cement.

815.10 Unusual Appearance.

Unusual appearance as to color, etc. shall be sufficient grounds for rejection of the cement.

815.11 Use, Care, And Handling.

(a) USE.

1. Bulk cement will be permitted provided the bulk cement is handled as follows:

a. Portland cement shall be measured by weight {mass}, considering that one bag of cement is equivalent to 94 pounds {42 kg} net of cement.

b. Handling equipment and the equipment used for weight {mass} determination shall be inspected by the Engineer prior to use. Cement shall be fully protected from contamination or damage during handling.

c. Bulk cement shall be batched by weight {mass}, and scales may be of either the beam or springless dial type and shall be the product of a reputable manufacturer. Scales shall be accurate to within a tolerance of 5 pounds per 1000 pounds {2 kg per 455 kg} net load in the hopper. The value of the minimum gradation of any scale shall not be greater than 0.1 percent of the scale capacity.

d. Provisions shall be made to indicate to the operator that the required load in the hopper or container is being approached, such as a springless dial indicator or tare beam. Such device shall indicate at least the last 50 pounds {22 kg} of load.

e. After the required weight {mass} of the cement is batched, it shall be protected from loss in handling or in transit.

2. Only cement of the same "Type" shall be used in the construction of any structure or unit (substructure or superstructure) except as permitted in writing. All cement in any container having lumps of cement or caked cement, or cement which for any reason has become damaged or partially set, shall be rejected. Cement salvaged from discarded or used bags shall not be used. Cement shall not be used while its temperature is more than 150 °F {65 °C}.

3. The Contractor shall keep accurate records of the deliveries of cement and its use in the work including that from ready-mix plants. Copies of these records shall be furnished the

Engineer at the close of each day's work or 8 hour run, in such form as he may require, showing the quantity used during the day or run at each part of the work.

(b) CARE AND HANDLING.

1. The Contractor shall provide suitable means for storing and protecting the cement against dampness. Cement not for immediate use shall be stored in suitable weather proof buildings. Buildings shall be placed in approved locations. Provisions for storage shall be ample and the shipment of cement as received shall be separately stored in such a manner as to provide easy access for identification and inspection of each shipment. On small structures, storage in the open may be permitted by authorization, in which case a raised platform and ample waterproof covering shall be provided. Stored cement shall meet the test requirements at any time after storage when a retest is ordered.

2. Cement of different types, even if tested and approved, shall be stored separately and shall not be mixed.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: August 2, 2013 Special Provision No. 12-0731

EFFECTIVE DATE: January 1, 2014

SUBJECT: Plant Topsoil.

Alabama Standard Specifications, 2012 Edition, SECTION 102 shall be revised as follows:

SECTION 661
TRANSPLANTING TREES, SHRUBS AND VINES

661.01 Description.

This Section shall cover the work of transplanting of specified trees, shrubs and vines and the reestablishing of them in positions shown on the plans or designated.

Basic work consists of digging plants, preparing them for transplanting and transporting thereof; preparation of plant sites or beds, furnishing and preparation of soil fertilizer, mulch and other miscellaneous incidentals necessary to planting procedure; the planting of plants in a workmanlike manner in accordance with accepted horticultural practices along with the water necessary to establish and maintain the plants in a live, growing condition throughout the life of the project. The amount of water to be used and when it is to be applied shall be the Contractor's responsibility until acceptance of the project.

661.02 Materials.

All materials shall conform with the requirements set forth in Division 800, Materials, with specific reference made to Section 860.

661.03 Construction Requirements.

(a) GENERAL.

The requirements provided for Vines, Shrubs and Tree Planting, Section 660, and Roadside Improvement Materials, Section 860, shall apply in all respects to transplanting trees and shrubs, except where otherwise indicated by specific requirements given below.

Trees, shrubs and vines to be transplanted will be identified clearly on the plans as to existing and proposed location, species, and size. Planting holes of the size shown on the plans for the particular specie of plant material shall be dug and approved prior to moving existing plants. Material to be transplanted shall be dug with the size ball for collected plants recommended in the American Standard For Nursery Stock, current edition, unless otherwise shown by plan details or directed by the Engineer.

(b) PLANT TOPSOIL

Plant topsoil shall meet the requirements of Section 660.

(c) WATERING.

The vine, shrub and tree plantings shall be given one watering during the course of the planting operations and additional watering as needed. Sufficient water shall be applied to wet thoroughly the adjacent area down through the root system. Water shall be applied in such a manner that will prevent erosion of the finished surface.

(d) CARE DURING CONSTRUCTION.

Care during construction shall be the same as specified in Subarticle 660.03(h).

(e) BASIS OF ACCEPTANCE AND REPLACEMENT.

The basis of acceptance and replacement shall be the same as specified in Subarticle 660.03(i).

661.04 Method of Measurement.

(a) VINES, SHRUBS AND TREES.

The quantity of transplanted vines, seedlings, shrubs and/or trees to be paid for under this item will be the actual number ordered, planted and accepted. Only vines, seedlings, shrubs and trees in a living, healthy condition will be accepted.

661.05 Basis of Payment.

(a) VINES, SEEDLINGS, SHRUBS, AND TREES.

Transplanted vines, seedlings, shrubs, and trees ordered, planted and accepted will be paid for at the contract unit price for each. Such price and payment shall be full compensation for furnishing plants, plant test or certification service, planting, pruning, guying and staking, wrapping, mulching, furnishing and applying fertilizer, and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

(b) WATERING.

No direct payment will be made for water used in the placement and care of planting during the construction. All water necessary shall be considered as a part of the unit price bid for items provided by this Section.

(c) PAYMENT WILL BE MADE UNDER ITEM NO.:

661-A Transplanting Vines, Kind - per each
661-B Transplanting Shrubs, Kind - per each
661-C Transplanting Trees, Kind - per each

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: November 26, 2013 Special Provision No. 12-0769

EFFECTIVE DATE: April 1, 2014.

SUBJECT: Extra and Force Account Work.

Alabama Standard Specifications, 2012 Edition, SECTION 109 shall be revised as follows:

SECTION 109
MEASUREMENT AND PAYMENT

109.04 Extra and Force Account Work.

(a) GENERAL.

The Contractor will receive and accept payment for work performed under his contract either as contract items of work or as extra work. Contract items of work will be paid for at the unit prices stipulated in the contract. Extra work will be paid for at the unit prices or lump sum stipulated in supplemental agreement, or on a force account basis. Supplemental agreements shall be executed in accordance with Subarticle 104.03(b). When prices are negotiated for payment by supplemental agreement, satisfactory proof of administrative markups for profit, overhead, and other costs may be required by the engineer. Extra work performed on a force account basis will be compensated for in the following manner.

(b) FORCE ACCOUNT BASIS.

1. LABOR.

For all labor, foremen, and superintendents, employed on the force account work, the Contractor shall receive the agreed hourly wages or scale for the number of hours the said laborers, foremen, and superintendents were actually engaging in or directly supervising such work. No allowance will be made for general superintendence. Hourly wages for salaried employees will be based on a 40-hour work week. The wages or scale shall be comparable to the wages or scale paid by the Contractor for work of a like nature on his contract pay items and shall be agreed upon in writing by the Contractor and Engineer before the said force account work is begun.

To this sum shall be added an amount equal to 25 percent thereof.

No additional pay beyond the agreed hourly scale will be allowed for "overtime work" unless such overtime work is authorized in writing by the Engineer.

Labor costs will be allowed for travel time to and from the jobsite when that travel is specifically for the purpose of accomplishing force account work. Travel time shall be established and approved by the Engineer prior to beginning of the work. Travel time costs shall be validated with certified payrolls.

Per diem or daily subsistence will be allowed when those costs are directly related to force account work and a part of the Contractor's usual and customary expenses. An additional 5 percent will be added to the per diem or daily subsistence costs.

2. BOND, INSURANCE AND TAX.

For public liability and property damage insurance and workmen's compensation insurance premiums, increased bond premiums, unemployment insurance contributions and social security taxes, the Contractor shall receive the actual cost, to which no percent shall be added; in addition on projects which the State Gross Receipt Tax is applicable, may include said tax. The Contractor shall furnish satisfactory evidence of the rates paid for such bond, insurance, and tax.

3. MATERIALS.

For materials accepted by the Engineer and used, the Contractor shall receive the actual cost of such materials delivered on the work (exclusive of machinery rentals as herein set forth) to which cost 15 percent will be added.

4. EQUIPMENT.

For rental rates of equipment (other than small tools) authorized by the Engineer for use on force account work, the Engineer will use the latest publication of the Rental Rate Blue Book for construction equipment published by PRIMEDIA Information Incorporated to determine payment to the Contractor. Payment will be made for the actual time that the authorized equipment is in operation on the force account work, including travel time to and from the jobsite, when that travel is specifically for the purpose of accomplishing force account work . The hourly rate for each piece of equipment will be the monthly rate shown in the equipment table divided by 176. Weekly and daily rates will not be used. In addition, for equipment solely dedicated to the force account work, consideration will be given to paying standby cost. Operating rates and standby rates for computing the equipment payment will be determined as follows:

Operating rates. The hourly rate will be multiplied by the appropriate rate adjustment factor and regional factor shown in the Rate Adjustment Table and on the Regional Adjustment Map, respectively, to obtain the adjusted hourly rate. The estimated operating cost/hour from the equipment table will be added to the adjusted hourly rate to establish the operating rate.

Standby rates. The use of a standby rate is appropriate when equipment has been ordered to be available for force account work but is idle for reasons which are not the fault of the Contractor. The standby rate will be determined by multiplying the adjusted hourly rate by 0.50. Operating rates will be used only when the equipment is actually being used. Standby rates will be used under the following conditions:

a. The equipment must be totally dedicated to the force account work and not used intermittently on other work.

b. Standby cost will not be considered until after the equipment has been operated on the force account work.

c. If the equipment is dedicated for force account for a full calendar work week, the standby time will be 40 hours minus the operating time for the week. If the difference in these two figures is zero or less, there will be no payment for standby.

d. If the equipment is dedicated for force account for a partial week, the standby time will be computed on a daily basis. The standby time per day will be 8 hours minus the operating time for the day. If the difference in these two figures is zero or less, there will be no payment for standby.

The above will apply without further adjustment if overtime work is approved by the Engineer.

The above shall be full compensation for all equipment costs except operator cost. Payment for operators will be under Item 109.04(b)1, Labor.

If equipment is required that is not listed in the Rental Rate Blue Book, then payment will be made for that equipment based on a certified or paid invoice for the period of time covered by the invoice. In this case, the equipment must be totally dedicated to the force account work and no distinction will be made between operating cost and standby cost. If this equipment is owned by the Contractor, then rental rates for operating and standby costs shall be agreed upon between the Contractor and Engineer prior to its use.

5. PROFESSIONAL SERVICES

Compensation for professional services shall be on an invoice basis. Labor and equipment costs will not be calculated separately for professional services.

6. COSTS NOT ALLOWED.

No allowance shall be made for the use of small tools or for other costs for which no specific allowance is herein provided.

7. ADMINISTRATIVE ALLOWANCE.

When force account work is accomplished by an approved subcontractor or professional service, the Contractor shall receive, as compensation for administration costs, an amount equal to five percent of the total amount paid under items 1, 3, and 4 of this Subarticle for force account work accomplished by an approved subcontractor or professional service.

8. COMPENSATION.

The compensation as set forth in this Subarticle shall be received by the Contractor as payment in full for extra work done on a force account basis. Said compensation shall cover all work, profit, administrative costs, and incidental costs of whatever nature incurred in the

work whether performed by the Prime Contractor or an approved subcontractor. At the end of each day, the Contractor's representative and the Inspector shall compare records of the cost of work done as ordered on a force account basis.

9. STATEMENTS.

No payment will be made for work performed on a force account basis until the Contractor has furnished to the Engineer duplicate itemized statements of the cost of such force account work, detailed as to the following:

a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman.

b. Designation, dates, daily hours, total hours, rental rate and extension for each truck and other unit of machinery and equipment.

c. Quantities of materials, prices, and extensions.

d. Transportation of materials.

e. Travel time for equipment.

f. Cost of public liability and property damage insurance and workmen's compensation insurance premiums, increased bond premiums, unemployment insurance contributions, and social security tax.

Statements shall be accompanied and supported by original receipted invoices for all materials used and transportation charges, provided that, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the original invoices the statements shall contain or be accompanied by an affidavit of the Contractor certifying that such materials were taken from his stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: January 7, 2014 Special Provision No. 12-0879

EFFECTIVE DATE: August 1, 2014

SUBJECT: Award and Execution of Contract.

Alabama Standard Specifications, 2012 Edition, SECTION 103 shall be revised as follows:

SECTION 103
AWARD AND EXECUTION OF CONTRACT

103.02 Award of Contract.

This Article (103.02) shall be amended by adding the following Subarticle (d) as follows:

(d) ALABAMA IMMIGRATION LAW

By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

The Contractor shall submit a certificate of compliance form to the Department for each contract prior to award. This form must have an original signature, and the project will not be awarded without the form. The certificate of compliance form is available on ALDOT's website (http://www.alletting.dot.state.al.us) and shall be furnished to the Alabama Department of Transportation by the apparent low bidder within ten (10) days of the letting at the following address:

Alabama Department of Transportation
Bureau of Office Engineer, Contracts/Administrative Section
1409 Coliseum Boulevard, Room E-101
Montgomery, Alabama 36110

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: September 19, 2014 Special Provision No. 12-1118

EFFECTIVE DATE: June 1, 2015

SUBJECT: Planing and Micro-Milling Existing Pavement,

Alabama Standard Specifications, 2012 Edition, shall be amended by replacing Section 408 with the following:

SECTION 408
PLANING AND MICRO-MILLING EXISTING PAVEMENT

408.01 Description.

This Section shall cover the work of removing existing asphalt pavement by either planing or micro-milling. Micro-milling is required to provide a more uniform surface than can be achieved by planing.

408.02 Equipment.

The planing and micro-milling machines shall be:

- self-propelled;
- the size and shape that allows traffic to pass safely through areas adjacent to the work;
- equipped with automatic grade and cross slope controls;
- equipped with a means to prevent dust from escaping the milling operation;
- capable of maintaining the required depth of cut and cross slope;
- furnished with a lighting system for night work if night work is required or allowed by the Engineer;
- provided with conveyors capable of removing the milled material and emptying it directly into trucks to be hauled away from the roadway.

Micro-milling equipment shall be capable of removing pavement to an accuracy of 1/16 of an inch.

408.03 Construction Requirements.

(a) PAVEMENT REMOVAL.

The existing pavement shall be removed to varying depths in a manner which will restore the pavement surface to a uniform longitudinal profile and cross section as shown on the plans or as directed by the Engineer.

The approximate depths of required removal are shown on the plans. The depth of removal may be increased or decreased across the width of the pavement to obtain the required roadway cross slope. The Contractor may make multiple cuts to achieve the required depth of cut.

The pavement removal shall be done to effectively minimize the amount of airborne dust. Wetting of the pavement may be required to minimize the airborne dust.

The Contractor shall provide a means of drainage to prevent water accumulation on the surface where the pavement has been removed.

Unless otherwise noted on the plans, the pavement removal shall be limited to an area that will be covered with a surface treatment or a layer of pavement within 72 hours after removal has begun.

The Contractor shall collect, transport and dispose the removed pavement material. The removed material shall become the property of the Contractor unless otherwise noted on the plans.

After pavement removal and immediately prior to resurfacing or opening to traffic, the surface shall be thoroughly swept with a power broom to remove fine material and dust particles. Sweeping shall be conducted in a manner that will minimize the potential for creation of a traffic hazard and minimize the creation of airborne dust. Material removed by sweeping shall be collected, transported and disposed by the Contractor.

(b) FINAL PLANED SURFACE.

The final planed surface shall be a uniform finish on the grade and slope shown to be required on the plans. The finished surface shall also not vary more than 1/4 of an inch from a 10 foot straightedge placed anywhere on the surface of the milled area.

The Contractor shall make adjustments to the planing equipment if these surface tolerances are exceeded.

(c) TEST SECTION FOR MICRO-MILLING.

Micro-milling shall be performed on a test section prior to beginning the micro-milling work. The size of the test section shall be the width of the micro-milling machine and a length of 1000 feet. The difference between the ridge and valley of the milled surface shall not exceed 1/16 of an inch when measured anywhere on the surface of the milled area.

Production micro-milling shall not begin until the Engineer approves the results of the micro-milling of a test section.

The Contractor shall make adjustments to the micro-milling equipment and micro-mill another 1000 foot long test section for evaluation by the Engineer until an acceptable test section has been produced. The Contractor will not be allowed to start production micro-milling until an acceptable test section has been produced. Repeated test sections shall be located in areas that have not been milled.

If the surface of the micro-milling is determined to be unacceptable at any time after production begins, the Engineer will require the Contractor make adjustments to the equipment and produce another test section for evaluation and approval.

Payment will not be made for micro-milling test sections that are unacceptable. Payment will be made after adjustments have been made and the surface of the test section is milled to an acceptable finish.

(d) FINAL MICRO-MILLED SURFACE.

The final micro-milled surface shall be a uniform finish on the grade and slope shown to be required on the plans. The finished surface shall also not vary more than 1/4 of an inch from a 10 foot straightedge placed anywhere on the surface of the milled area. The difference between the ridge and valley of the milled surface shall not exceed 1/16 of an inch.

The Contractor shall make adjustments to the micro-milling equipment and construct a test section for evaluation and approval if these surface tolerances are exceeded.

408.04 Method of Measurement.

The planing of pavement will be measured in square yards {square meters} computed from surface measurements taken to the nearest 0.1 of a foot {0.1 m} on the planed pavement.

The micro-milling of pavement will be measured in square yards computed from surface measurements taken to the nearest 0.1 of a foot {0.1 m} on the micro-milled pavement.

In areas where a non-uniform layer of thickness is removed, the approximate layer thickness will be computed by averaging the depth of cut at opposite lane edges for each travelway at longitudinal measurement intervals of approximately 300 feet {100 m} or as directed by the Engineer. This average depth will be used to establish the item number under which payment will be made.

408.05 Basis of Payment.

(a) UNIT PRICE COVERAGE.

The planing and micro-milling of pavement will be paid for at the contract unit price which shall be full compensation for removing the pavement, collecting, transporting and disposing of the removed pavement and other debris, the removal and disposal of pavement markers, sweeping the pavement and collecting, transporting and disposing of the swept debris and for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

408-A Planing Existing Pavement (Approximately __*__ inches {mm} thru _**_ inches {mm} thick) - per square yard {square meter}

408-B Micro-Milling Existing Pavement (Approximately _*_ inches thru _**_ inches thick) - per square yard

* Lower limit of approximate thickness to be removed.

** Upper limit of approximate thickness to be removed.

SPECIAL PROVISION NO. 9001 – INSURANCE REQUIREMENTS

INSURANCE

The Contractor shall provide umbrella form general liability coverage with a limit of liability of not less than $1,000,000 which applies to general and automobile liability coverage.

PROTECTION OF OWNER

The Contractor hereby agrees to hold harmless, indemnify and defend the Owner, the Owner's agent, the Consulting Engineer, and the Owner's employees while acting within the scope of their duties from and against any and all liability, claims, damages, and cost of defense arising out of the Contractor's performance of the work described herein but not including the sole negligence of the Owner, his agents or employees. The Contractor will require any and all subcontractors to conform with the provisions of this clause prior to commencing any work. **The Contractor shall furnish an Owner's Protective Liability Policy which lists both the Owner and the Engineer are Named Insured.** This insurance coverage shall be provided in a policy separate from the Contractor's insurance policies, and a copy of the policy shall be provided to the Engineer. The limits of liability shall not be less than $1,000,000.

SPECIAL PROVISION NO. 9002 - ACCIDENT PREVENTION, SAFETY, AND PROTECTION OF PROPERTY

The Contractor shall be responsible for job safety and for compliance with all applicable OSHA requirements, criteria, and regulations. All costs of complying with these safety requirements shall be included in the unit prices bid in the proposal.

As a part of the OSHA compliance, the Contractor shall be completely responsible for planning and implementing all methods and measures necessary to fully comply with the OSHA requirements for excavations and trench protection. All costs of complying with these safety requirements shall be included in the unit prices bid in the proposal.

The Contractor and he alone shall be liable for any claims or lawsuits made or filed in connection with damages, injuries, loss of life, or other accidents caused by his construction operations or due to his negligence or to the negligence of his employees in taking proper and adequate precautions to insure the safety of the general public, his own employees, or any other person or property, or due to unforeseen accidents incident to the work such as trench cave-ins, ruptured utility lines and conduits, etc. The Contractor shall indemnify and save harmless the Owner, the Owner's Engineer, and all other agents, officials, or employees of the Owner, against any claims or lawsuits made or filed against him in connection with his work under this contract.

The Contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Owner will require that caution shall be exercised by the Contractor at all times for the protection of persons (including employees) and property and that the safety provisions of all applicable laws and building codes shall be complied with. The Contractor shall comply with all applicable OSHA criteria and shall maintain a safety program as outlined in the Manual of Accident Prevention in Construction published by the Associated General Contractors of America.

Prior to beginning construction work, the Contractor shall thoroughly document the condition of all existing landscaping, structures, and other improvements located in the project area, including along the lines in those locations where property damage or damage claims may result from the construction work. The manner in which this documentation is accomplished shall be acceptable to the Engineer, but shall include as a minimum, a color video(s) of the entire job area. A complete set of documentation will be available on the job site to help determine what restoration work is required to return any disturbed property to its original condition and to settle any questions or disputes concerning the original conditions of any property.

SPECIAL PROVISION NO. 9003 - CLEANUP, MAINTENANCE & PRIVATE PROPERTY

The work site shall be cleaned up on a daily basis, including paved areas being utilized by the public.

Where the Contractor has performed work on, or has made use of private property for storage of materials or for other purposes, he shall obtain a satisfactory release from the Owner of said property after completion of the work and the removal of all materials and equipment therefrom.

The Contractor shall take care not to damage any trees, shrubs, etc. located on street right-of-way or public or private property. Any vegetation accidentally damaged shall be treated or repaired by a nursery or other qualified person to protect the vegetation and return it to as near its original condition as possible.

Throughout the progress of the work, the Contractor shall keep the construction area, including storage areas used by him, free from accumulations of waste materials or rubbish. All waste materials shall be disposed of at locations satisfactory to the Engineer.

SPECIAL PROVISION NO. 9004 - MISCELLANEOUS

The Contractor shall notify the Engineer at least 24 hours prior to performing any work in order that arrangements can be made for a construction observer to be on site during the construction.

The Contractor shall abide by all local and State laws or ordinances to the extent that such requirements do not conflict with Federal laws or regulations. The Contractor shall be responsible for the purchase of all licenses and permits required by the City, County, State or Federal government, and shall comply with all laws, ordinances, or regulations of those governments in pursuance of the work spelled out in this contract.

All surveying necessary to construct the improvements shall be the responsibility of the Contractor.

The Engineer shall have no authority over the operations, work, or employees of the Contractor. The Engineer shall be the final authority as to the adequacy and completeness of the work and materials, but shall have no authority to give directions related to the process of the work.

SPECIAL PROVISION NO. 9005 - WORK SCHEDULE

The time for completion of this Contract is based on a standard weekly work schedule of Monday through Friday. No work shall be scheduled or performed on Saturday, Sunday, or holidays, except for any required emergency maintenance work, without the prior approval of the Engineer. The holidays are: New Year's Day, National Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Eve, and Christmas Day. If a holiday falls on a Saturday, it will be applied to the proceeding Friday. If a holiday falls on a Sunday, it will be applied to the following Monday.

The above days in which No work shall be scheduled or performed will be allowed as Legal Holidays in computing Contractor's time charges on a working day basis in addition to Legal Holidays in the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition.

SPECIAL PROVISION NO. 9006 – TREE ROOT REMOVAL AND TREATMENT

The item in the Proposal for Tree Root Removal and Treatment shall include all costs of removing the existing tree roots at locations, as deemed necessary by the Engineer, where tree roots may cause damage to the proposed work. After the tree roots have been removed, the area adjacent to the proposed work shall receive a 1.5' deep section of Biobarrier or other approved root control material, in accordance with the detail in the Plans of sufficient length that covers the extents of the roots along the edge of the proposed work. Payment will be full compensation for all materials, labor, tools and incidentals necessary to complete the tree root removal and treatment at each tree or sections of trees (or other plants or vegetation) as specified, and will be made as follows:

663E-000 Tree Root Removal and Treatment, per LF.

SPECIAL PROVISION NO. 9007 – FENCING

The Contractor shall construct new chain link fence at the locations shown on the Plans, as directed by the Engineer and Owner, and as necessary to construct other items in accordance with: industry standards; all applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition; ALDOT Special Provision No. 12-0292 – "Fencing Materials"; all applicable drawings from the Alabama Department of Transportation Special and Standard Drawings, Latest Edition (except for no middle rail as shown in the drawings); and with the following in this Special Provision:

All new chain link fence shall be constructed with a total height of 4 feet and a 1.660" O.D. top rail and bottom tension wire both attached to the fabric. All materials shall be metallic coated steel Grade 1 with black polyvinyl chloride coating. This new fence shall be paid for by the unit price item, **634A-015 Industrial Fence, 4 Feet High (P.V.C. Coated With Top Rail)**, LF. This pay item shall cover the material and labor necessary to construct the fence.

The Contractor shall construct new Post and Rail Round Style Wood Fence at the locations shown on the Plans, as directed by the Engineer and Owner, and as necessary to construct other items. The fence shall be constructed in accordance with industry standards and with all applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition and with all applicable drawings from the Alabama Department of Transportation Special and Standard Drawings, Latest Edition. The new fence shall be a 2-rail design version with a rail length of 8' constructed of posts and rails with full-length pressure treatment. The posts shall be Pre-drilled, with a Post Diameter of 4 ½", with a height of 4' above the ground line, and the post drilling to be according to the 2-rail design version. The new posts shall be installed with a 2'-6" minimum depth to provide stability, making the total minimum length of the new posts to be 6'-6". The new rails shall be installed so the rails are stable and properly fitted to the pre-drilled holes in the posts, including the fence corners. The new posts and rails shall be installed so that the fence is plumb and level with the ground. This new fence shall be paid for by the unit price item, **638C-001 Post and Rail Round Style Wood Fence**, LF. This pay item shall cover the material and labor necessary to construct the fence.

SPECIAL PROVISION NO. 9008 - CONCRETE & HANDICAP RAMP

The Contractor shall construct concrete items at the locations shown on the Plans and as directed by the Engineer and Owner in accordance with all applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition. All concrete shall meet the requirements for a Class A, Type 2 mix according to Section 501 of the ALDOTSSCH, Latest Edition, except that concrete engineered reinforcing fibers shall be used in the mix. The reinforcing fibers shall be applied at a rate of 1.5 pounds per cubic yard and shall consist of 100% virgin polypropylene, collated, fibrillated fibers from the Fibermesh Co., or approved equal. Only fibrillated fibers designed and manufactured specifically for use in concrete from 100% virgin polypropylene and so certified by the manufacturer shall be acceptable.

The Contractor shall construct concrete handicap ramps and landings where sidewalks intersect curbs and at the locations shown on the plans. The ramps and landings shall be constructed in accordance with all applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition and all applicable drawings from the Alabama Department of Transportation Special And Standard Drawings, Latest Edition.

The sections of handicap ramps and landings with tie-ins to curb or curb and gutter shall be paid for by the unit price item, **620A-100 Handicap Ramp Concrete**, SY. This pay item shall cover all concrete and labor necessary to construct the sections of ramps / landings with tapering curb, curb, or curb and gutter from the end of the tapering curb in the ramp and landing to the tie-ins to the existing edge of paving, curb, or curb and gutter of the street. This includes the extra labor and material necessary to shape and slope the ramp, landing, tapering curb, and tie-ins to existing curb or curb and gutter. The approximate areas and sections of the concrete to be paid for by Handicap Ramp Concrete are shown by the details on the plans.

All excavation required for the various concrete items shall be considered as incidental to the overall project and be included in the unit price bids for the concrete items. All existing material resulting from the excavation and grading which is suitable for use as topsoil or select backfill shall be reused on the project. All deleterious or unsuitable material for topsoil or select backfill shall be hauled away and disposed of at a location approved by the Owner. The various concrete pay items shall also cover the labor and equipment necessary for the reuse, transporting, and disposal of existing material from the excavation. All borrow material for select backfill required for the various concrete items shall be paid for by the unit price item, **210D-001 Borrow Excavation (Loose Truckbed Measurement), CY**.

SPECIAL PROVISION NO. 9009 – TREE & SHRUB TRANSPLANTINGS, REMOVALS, & TRIMMING

Small trees, shrubs, and bushes may require transplanting, removal, or trimming in accordance with Section 661 of the ALDOT Standard Specifications for Highway Construction. Payment for the transplanting shall be made on the basis of the unit price for **661C-001 Transplanting Small Trees & Shrubs**, each. Removals and trimming required for construction of the various other bid items shall be considered as incidental to the overall project and be included in the unit price bid for the various other bid items.

SPECIAL PROVISION NO. 9010 – BORROW EXCAVATION (LOOSE TRUCKBED MEASUREMENT)

210D-001 Borrow Excavation (Loose Truckbed Measurement) – Section 210 of the ALDOT Standard Specifications for Highway Construction is hereby revised to provide that all borrow material supplied shall meet the color requirements of the City of Gulf Shores. All borrow material shall be select backfill to be placed in 6" lifts and compacted to 98% of AASHTO T-99 Specs. The existing ground where select backfill is to be placed shall be compacted prior to placing the backfill.

SPECIAL PROVISION NO. 9011 – TIMBER RETAINING WALL

The Contractor shall install timber retaining wall at the location shown on the plans. The wall shall be constructed in accordance with the detail and typical section shown on the plans. Grading and excavation of the existing ground is required in order to install the wall. All existing material resulting from the excavation and grading which is suitable for use as topsoil or select backfill shall be reused on the project. It is the intention to reuse this material in the fill area adjacent to the wall in this section of the project. All deleterious material unsuitable for use as topsoil or select backfill shall be removed and disposed of at a location approved by the Owner.

The timber retaining wall shall be paid for by the unit price item, **999A-002 Timber Retaining Wall Cross-Tie**, LF based on the length of each railroad cross-tie installed. This pay item shall cover the materials and labor necessary to construct the wall, including the rebar pins. This pay item shall also cover the labor and equipment necessary for the grading and excavation of the existing ground in order to install the wall and for the reuse, transporting, and disposal of existing material from the excavation. All borrow material for select backfill required for the installation of the wall shall be paid for by the unit price item, **210D-001 Borrow Excavation (Loose Truckbed Measurement),** CY.

SPECIAL PROVISION NO. 9012 –
PLANING EXISTING PAVEMENT (INTERSECTIONS)

The Contractor shall mill down asphalt of existing pavement overlays which currently exceed the height of the existing gutter at the handicap ramp locations to a depth and width as necessary to install an asphalt transition which shall meet ADA criteria at the locations shown on the Plans in accordance with the details shown on the plans, all applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition and ALDOT Special Provisions, and as directed by the Engineer and Owner.

The milling shall be paid for by the unit price item, **408A-076 Planing Existing Pavement (Intersections)**, **SY**. This pay item shall cover the materials and labor necessary to mill down the asphalt.

SPECIAL PROVISION NO. 9013 –
PLANING EXISTING PAVEMENT (INTERSECTING STREETS & DRIVEWAYS)

The Contractor shall mill down existing asphalt on intersecting streets & driveways which currently exceeds the ADA cross slope criteria of 2% as necessary to install an asphalt surface which shall meet ADA criteria and transitions to the existing elevation and grade of the existing pavement at the locations shown on the Plans in accordance with the details shown on the plans, all applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition and ALDOT Special Provisions, and as directed by the Engineer and Owner.

The milling shall be paid for by the unit price item, **408A-077 Planing Existing Pavement (Side Streets & Driveways)**, **SY**. This pay item shall cover the materials and labor necessary to mill down the asphalt.

SPECIAL PROVISION NO. 9014 –CRUSHED AGGREGATE BASE COURSE, TYPE B, PLANT MIXED

301A-004 Crushed Aggregate Base Course, Type B, Plant Mixed – Section 301 of the ALDOT Standard Specifications for Highway Construction is hereby revised to provide that recycled concrete may be utilized for the crushed aggregate base course. The recycled concrete must meet the Type B gradation requirements. All base material supplied shall meet the color standards of the City of Gulf Shores.

SPECIAL PROVISION NO. 9015 – MANHOLE COVER AND FRAME ADJUSTMENT & REPLACEMENT

The Contractor shall replace manhole frames and covers at the locations indicated in the plans and as directed by the Engineer. The Contractor shall remove the frame, remove all asphalt and concrete necessary in order to remove the frame and cover, install the new frame and cover, adjust the levels with masonry, and pour concrete reinforced with fibermesh around the frame. The concrete shall have a minimum thickness of 6” and a diameter of 48" around the frame. The manhole frame and cover shall be U.S. Foundry 152 (Montgomery Standard) or East Jordan Iron Works, Inc. V-1312 with a 24” clear opening and non-penetrating pickholes, or equal. The top of the frame and cover shall match the existing or proposed wearing surface of the existing street or proposed sidewalk. Payment for the frame removal and the materials and installation of the new frame and cover and masonry shall be paid for by the unit price item, **645K-501 Manhole Frame And Cover Replacement, Each**. The concrete and any required asphalt or concrete pavement removal, replacement, roadway stone, etc. associated with this work shall be included in the various unit price items.

The Contractor shall adjust the tops of existing manhole frames and covers to match the existing or proposed wearing surface of the existing street or proposed sidewalk. The Contractor shall remove all asphalt and concrete necessary in order to remove the frame, remove the frame, adjust the levels with masonry and pour concrete reinforced with fibermesh around the frame. The concrete shall have a minimum thickness of 6” and a diameter of 48" around the manholes. Payment for adjusting the tops of existing manhole frames and covers and the materials and installation of the masonry shall be at the contract unit price bid for **645K-500 Manhole Frame And Cover Reset, Each**. The concrete and any required asphalt or concrete pavement removal, replacement, roadway stone, etc. associated with this work shall be included in the various unit price items.

SPECIAL PROVISION NO. 9016 –
RELOCATION OF PEDESTRIAN TRAFFIC SIGNAL ACTIVATION PEDESTALS

At some locations, the existing Pedestrian Traffic Signal Activation Pedestals will conflict with the installation of the proposed sidewalk improvements. These pedestals shall be relocated in accordance with all applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction (ALDOTSSHC), Latest Edition and all applicable drawings from the Alabama Department of Transportation Special And Standard Drawings, Latest Edition. Each pedestal relocation shall be paid for by the unit price item, **730Y-090, Relocation of Pedestal Pole and Foundation, Each**. This pay item shall cover the removal of the pedestal from the current location, resetting the pedestals in the new location, and the electrical wiring work as necessary to reconnect the pedestal.

HR-DBE
Revised 01-2007

Date:_____

Letting Date:_____

BIDDER'S LIST OF QUOTERS

In accordance with 49 CFR Part 26.11, the Alabama Department of Transportation will establish its State Disadvantaged Business Enterprise (DBE) goal using Bidders' Lists of Quoters. These Bidders' Lists of Quoters will be used to determine the relative availability of DBE's and Non-DBE's. Each Bidder's List of Quoters is a compilation of quoters who have submitted quotes to the Bidder during the advertising period. Subsequent to notification as Apparent Low Bidder, the Bidder must submit an **updated** Form HR-DBE prior to award of contract. Form HR-DBE will accompany Form OE-110 (DBE Utilization Plan) if appropriate.

Each time Form HR-DBE is submitted to the Department, the Bidder shall list the quoters for the project, using additional sheets if necessary. The listing shall include EACH quoter's name, business location, telephone number and whether or not the quoter is an Alabama certified DBE. **FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RENDER THE BID NON-RESPONSIVE AND THE BID MAY BE REJECTED.**

The term "quoter" shall include all subcontractors, manufacturers, and suppliers of materials.

Providing the listing of quoters in compliance with these provisions shall not be a substitute for the requirements of Subcontractors Fair Practices Act, Chapter 18, Laws of 1988, Sections 13-4-31 through 13-4-43.

BIDDER'S NAME: _____ PROJECT NUMBER: _____ COUNTY: _____

Quoter's Name	Address	Telephone Number	DBE/Non-DBE

Rev. 1-2007

ALDOT FORM DBE-10

1. Project Number:			2. County:					3. Division:
4. Prime Contractor:			5. DBE:					
6. Date:	7. ALDOT Estimate:		8. Estimate Period:	From:			To:	

9. Description of Work: (Pay Item No. & Description)		10. Type Firm (C/S/M/BF)	11.Unit Price	12.Units	13. Units Worked	14. Amount Performed this Period	15.Units Performed to Date	16. Amount Performed to Date
Pay Item No.	Item Description							
17. Comments:						18. Total:		19. Total:

20. Signature of Authorized Representative:	Printed Name & Title	Date Signed

Form DBE-11
Revised 1-2007

ALABAMA DEPARTMENT OF TRANSPORTATION
Certification of Actual Payments to DBE Firms

Project No.: _____
County: _____

1. The undersigned prime contractor on the above referenced Federal Aid Project No. hereby certifies that full payment was made, or will be made within seven (7) calendar days after final payment, to the DBE firm listed for work performed and/or materials furnished under this project's contract as follows:

   DBE Firm Name: _____

   was or will be paid $ _____

   Note: this amount does / does not include gross receipts tax and bond.
   (circle one) (circle if applicable)

   This certification is made under Federal and State laws concerning false statements. Supporting documentation for this payment is subject to audit and should be retained for a minimum of three (3) years from the final acceptance date.

   If the DBE Subcontractor/Supplier works for a Non-DBE Subcontractor under the Prime Contractor, the Non-DBE Subcontractor must also complete the form.

Prime Contractor	Non-DBE Subcontractor
By: _____ signature	signature
Name: _____ please print	please print
Title: _____	
Date: _____	

2. The undersigned subcontractor/supplier for the above named project hereby certifies that payments were received, or are due to be received as stipulated above.

   _____
   DBE Subcontractor/Supplier

   By: _____
   signature

   Name: _____
   please print

   Title: _____

   Date: _____

CONTRACT

THIS AGREEMENT made and entered into this _____ day of _____,
(Day) (Month)
Two Thousand _____, by and between the
(Year written in words)
City of Gulf Shores, Alabama, party of the first part (hereinafter called the **Owner**)

and _____ of
(Name of Contractor)
_____, party
(Mailing Address)
of the second part (hereinafter called the **Contractor**), WITNESSETH:

WHEREAS, the **Owner** desires the construction of SIDEWALK IMPROVEMENTS, (hereinafter called the **Project**), and the **Contractor** desires to furnish and deliver all the material and to do and perform all the work and labor for the said **Project**;

NOW, THEREFORE, in consideration of the premises, the mutual covenants herein contained and the sum of one dollar ($1.00) by each of the parties to the other in hand paid, the receipt whereof is hereby acknowledged, the parties hereto agree as follows:

1. The **Contractor** promises and agrees to furnish and deliver all the material and to do and perform all the work and labor required to be furnished and delivered, done and performed in and about the construction of the **Project** in the City of Gulf Shores, Baldwin County, Alabama, known as Federal Aid Project Number **STPTE-TE13(908), TAPAA-TA13(923) AND TAPAA-TA15(935),** in strict and entire conformity with the provisions of the Contract, and the Notice to Contractors and the Proposal, and the Plans and Specifications (including Special Provisions) prepared by (or for) the **Owner**, the originals of which are on file with the **Owner**, and which said Plans and Specifications and the Notice to Contractors and the Proposal are hereby made a part of this Agreement as fully and to the same effect as if the same had been set forth at length in the body of this Agreement.

2. The **Owner** agrees and promises to pay to the **Contractor** for said Work, when completed in accordance with the Provisions of this Contract, the price as set forth in

the said Proposal, amounting approximately to _____
(Amount written
_____ dollars ($ _____),
in words) (Amount in numerals)
payments to be made as provided in said Specifications upon presentation of the proper certificates of the **Owner** and upon the terms set forth in the said Specifications and pursuant to the terms of this Contract.

3. The said work shall be done in accordance with the laws of the State of Alabama under the direct supervision, and to the entire satisfaction of the **Owner**, subject at all times to the inspection and approval of the United States Secretary of Transportation, or his agents, and in accordance with the rules and regulations made pursuant to the Federal Highway Act and Acts of the Federal Congress, amendatory and/or supplementary thereto.

4. The decision of the **Owner** upon any question connected with the execution of this Agreement or any failure or delay in the prosecution of the Work by the said **Contractor** shall be final and conclusive.

5. The **Contractor** agrees to abide by ALDOT's **"Principles of Business Conduct"**.

IN WITNESS WHEREOF, THE CITY OF GULF SHORES, ALABAMA has caused these presents to be executed by its MAYOR and _____ (Name of Contractor), the **Contractor**, has hereto set his hand and seal this the day and year above written.

ATTEST: CITY OF GULF SHORES, ALABAMA,

_____ By:_____
CITY Clerk as Mayor

NAME OF CONTRACTOR: _____
(Individual, Partnership, Corporation, or Joint Venture)

ALABAMA CONTRACTOR'S LICENSE NUMBER: _____

By: (X)_____ (X)_____
Contractor's Signature Witness

_____ _____
(Print Name) (Print Name)

_____ _____
Title Title

By: (X)_____ (X)_____
Contractor's Signature Witness

_____ _____
(Print Name) (Print Name)

_____ _____
Title Title

By: (X)_____ (X)_____
Contractor's Signature Witness

_____ _____
(Print Name) (Print Name)

_____ _____
Title Title

THIS FORM IS TO BE COMPLETED AND RETURNED WITH YOUR EXECUTED CONTRACT

AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

Statement Required To Be Submitted By Proposed Contractor Pursuant To Notice Of Requirement For Affirmative Action To Ensure Equal Employment Opportunity (Executive Order 11246) And Regulation In 41 CFR Part 60-4 On All Federal And Federally Assisted Contracts In Excess of $10,000.

Project Number: STPTE-TE13(908)
TAPAA-TA13(923)
TAPAA-TA15(935)

County: Baldwin

Contractor: _____

Mailing Address: _____
Street City State Zip

Telephone Number:_____ _____
A.C.

Employer Identification Number:_____

"Employer Identification Number" means the Federal Social Security Number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941.

Amount of Contract: $_____

Estimated Starting Date:_____ Estimated Completion Date:_____

Signed:_____ Date:_____
Contractor's Representative

NOTE: If more than one contractor firm is involved, a copy of this statement shall be completed by each contractor and returned with the executed contract.

BOND

FOR PERFORMANCE OF THE WORK

STATE OF ALABAMA,
BALDWIN COUNTY.

KNOW ALL MEN BY THESE PRESENTS: That _____

_____, as Principal, and,

_____, as Surety,

are held and firmly bound unto the CITY OF GULF SHORES, ALABAMA, as Obligee, in the penal

sum of _____

Dollars ($_____), for the payment of which well and truly to be made, we hereby bind

ourselves, our heirs, executors, administrators, successors and assigns.

PROVIDED, HOWEVER, that the condition of this obligation is such that whereas the above bound Principal has this day entered into a Contract with the said Obligee, for the construction of SIDEWALK IMPROVEMENTS, in the City of Gulf Shores, Baldwin County, Alabama, to-wit: known as Federal Aid Project No. STPTE-TE13(908), TAPAA-TA13(923), AND TAPAA-TA15(935), a copy of which said Contract is hereto attached.

NOW, THEREFORE, In the event the said Principal as such Contractor shall faithfully and promptly perform said Contract and all the conditions and requirements thereof, then this obligation shall be null and void and of no effect, otherwise to remain and be in full force and effect.

PROVIDED, further, that upon the failure, in any respect, of the said Principal to promptly and efficiently prosecute said work in accordance with the Contract, the above bound Surety shall, at its own expense, take charge of said work and complete the Contract, pursuant to the terms of the Contract, receiving, however, any balance of the funds in the hands of said Obligee due under said Contract. Said Surety may, if it so elects, by written direction given to the Obligee authorize the Obligee to advertise for bids to complete the said Contract at the expense of said Surety, and such Surety hereby agrees and binds itself to pay the expense of the completion of such work, less any funds in the hands of the Obligee remaining, under said Contract, to be due to said Principal.

In the event said Principal shall fail or delay the prosecution and completion of said work and said Surety shall also fail to act promptly as hereinbefore provided, then said Obligee may cause ten days notice of such failure to be given, either to said Principal or Surety, and at the expiration of said ten days, if said Principal or Surety do not proceed promptly to execute said contract, the Obligee shall have the authority to cause said work to be done, and when the same is completed and the cost thereof estimated, the said Principal and Surety shall and hereby agree to pay any excess in the cost of said work above the agreed price to be paid under said Contract.

Upon the completion of said Contract pursuant to its terms, if any funds remain due on said Contract, the same shall be paid to said Principal or Surety.

The said Principal and Surety further agree as part of this obligation to pay all such damages of any kind to person or property that may result from a failure in any respect to perform and complete said Contract.

The decision of said Obligee's designated representative upon any question connected with the execution of said Contract, or any failure or delay in the prosecution of the work by said Principal or Surety, shall be final and conclusive.

The Proposal, Specifications and the Contract hereinbefore referred to, and the Bond for the Payment of Labor, Materials, Feed-stuffs or Supplies executed under the provisions of Section 39-1-1, Code of Alabama 1975, as amended, are made a part of this obligation, and this instrument is to be construed in connection therewith.

IN WITNESS WHEREOF, we have hereunto set our hands and seals, this the _____ day of _____, 20_____, pursuant to the authority of the governing body of each of our respective parties.

NAME OF CONTRACTOR: _____
(Individual, Partnership, Corporation, or Joint Venture)

By: (X)_____ (X)_____
Contractor's Signature Witness

_____ _____
Title/Address Title

By: (X)_____ (X)_____
Contractor's Signature Witness

_____ _____
Title/Address Title

By: (X)_____ (X)_____
Contractor's Signature Witness

_____ _____
Title/Address Title

_____
NAME OF SURETY

BY: _____
ATTORNEY-IN-FACT

Countersigned by Alabama Licensed Insurance Producer for Surety, if applicable:

_____ _____
Producer's Name License No.

_____
Address

NOTICE TO INSURANCE PRODUCER: Please print or write legibly your name and complete address below including PRODUCER'S COMPANY

_____

_____

_____
PRODUCER'S COMPANY

BOND

FOR PAYMENT OF
LABOR, MATERIALS, FEED-STUFFS OR SUPPLIES

STATE OF ALABAMA,
BALDWIN COUNTY.

KNOW ALL MEN BY THESE PRESENTS: That _____

_____, as Principal, and,

_____, as Surety,

are held and firmly bound unto the CITY OF GULF SHORES, ALABAMA, as Obligee, in the penal sum of _____

Dollars ($_____), for the payment of which well and truly to be made, we hereby bind ourselves, our heirs, executors, administrators, successors and assigns.

PROVIDED, HOWEVER, that the condition of this obligation is such that whereas the above bound Principal has this day entered into a Contract with the said Obligee, for the construction of SIDEWALK IMPROVEMENTS in the City of Gulf Shores, Baldwin County, Alabama, to-wit: known as Federal Aid Project No. STPTE-TE13(908), TAPAA-TA13(923) AND TAPAA-TA15(935), a copy of which said Contract is hereto attached.

NOW, THEREFORE, In the event the said Principal as such Contractor shall promptly make payment to all persons supplying him with labor, material, feed-stuffs, or supplies for or in the prosecution of the work provided for in said Contract, then this obligation shall be null and void and of no effect, otherwise to remain and be in full force and effect.

PROVIDED, further, in the event that the said Principal as such Contractor shall fail to make prompt payment to all persons supplying him with labor, material, feed-stuffs, or supplies for or in the prosecution of the work provided for in such Contract, the above bound Surety shall be liable for the payment of such labor, material, feed-stuffs, or supplies and for the payment of reasonable attorney's fees incurred by successful claimants or plaintiffs in suits on said bond as provided in Section 39-1-1, Code of Alabama 1975, as amended.

PROVIDED, further, that said Contractor and Surety hereby agree and bind themselves to the mode of service described in Section 39-1-1, Code of Alabama 1975, as amended, and consent that such service shall be the same as personal service on said Contractor or Surety.

Upon the completion of said Contract pursuant to its terms, if any funds remain due on said Contract, the same shall be paid to said Principal or Surety.

The decision of said Obligee's designated representative upon any question connected with the execution of said Contract, or any failure or delay in the prosecution of the work by said Principal or Surety, shall be final and conclusive.

The Proposal, Specifications and the Contract hereinbefore referred to, and the Bond for the Performance Of The Work executed under the provisions of Section 39-1-1, Code of Alabama 1975, as amended, are made a part of this obligation, and this instrument is to be construed in connection therewith.

IN WITNESS WHEREOF, we have hereunto set our hands and seals, this the _____ day of _____, 20_____, pursuant to the authority of the governing body of each of our respective parties.

NAME OF CONTRACTOR: _____
(Individual, Partnership, Corporation, or Joint Venture)

By: (X)_____ (X)_____
Contractor's Signature Witness
_____ _____
Title/Address Title

By: (X)_____ (X)_____
Contractor's Signature Witness
_____ _____
Title/Address Title

By: (X)_____ (X)_____
Contractor's Signature Witness
_____ _____
Title/Address Title

_____
NAME OF SURETY

BY: _____
ATTORNEY-IN-FACT

Countersigned by Alabama Licensed Insurance Producer for Surety, if applicable:

_____ _____
Producer's Name License No.

_____
Address

NOTICE TO INSURANCE PRODUCER: Please print or write legibly your name and complete address below including PRODUCER'S COMPANY

_____

_____

_____
PRODUCER'S COMPANY

DMD engineers

Professional....yet personal

Civil and Environmental Engineering

Andalusia, Alabama

Office 334-222-1849
Fax 334-222-1869
www.dmdengineers.com

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